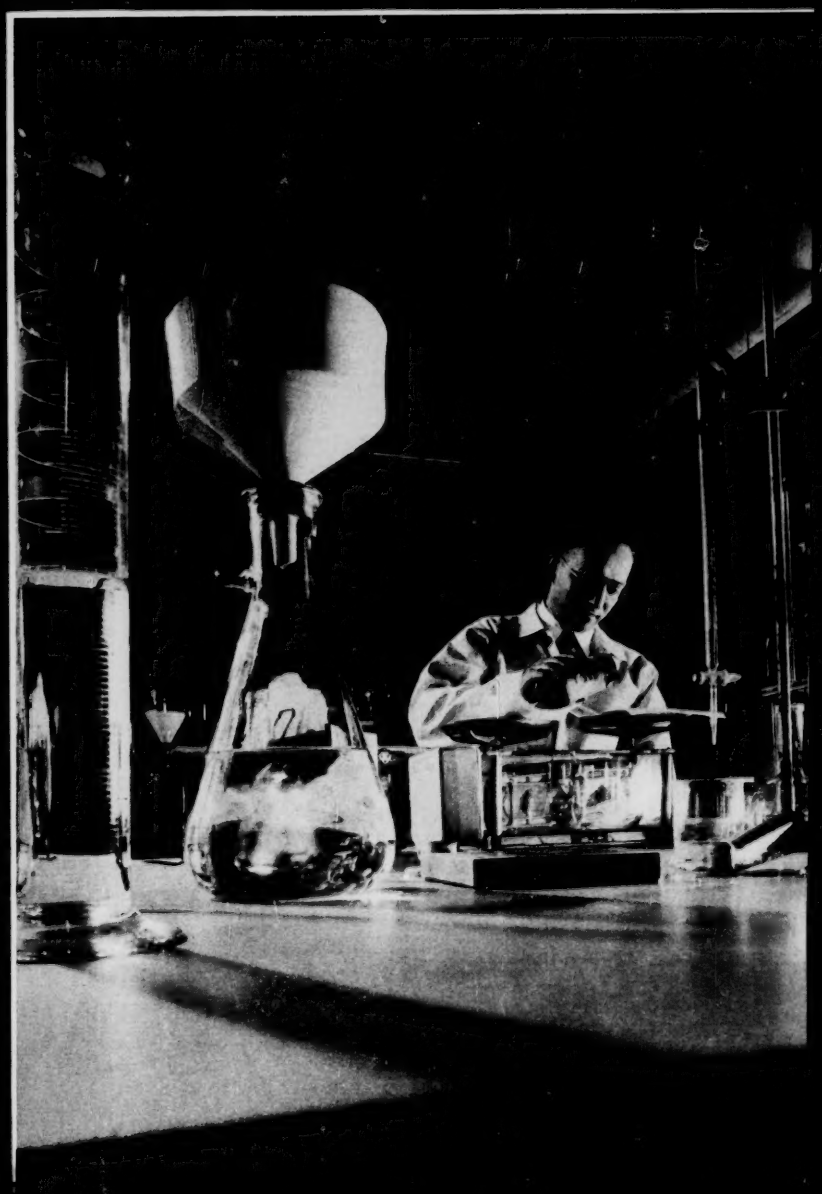
STANDARDIZATION

Formerly Industrial Standardization

News Magazine of the American Standards Association, Incorporated



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Readers Write

A Suggestion— More Standards for Control Of Toxic Dusts and Gases

Research Laboratories Division
General Motors Corporation
Detroit, Michigan

Gentlemen: Perhaps the meager number of standards established by the American Standards Association to date compared to the host of contaminants encountered in industry is one of the impelling motives that has caused official agencies to set up and publish an extensive list of maximum allowable concentrations. This list has in turn been republished in trade journals as a list of official permissible limits. Although we also use this "official" list as a guide in some instances, we deplore the publication without qualification of such a list. Most values stated are mere estimates and although they are helpful benchmarks to some who understand their significance, they become embarrassing to many when given force of law or when adopted in state codes. Many contaminants are encountered that appear in no list of permissible limits and even a search of the literature dealing with pharmacology and toxicology offers little guidance for establishing control.

Personally, I feel that it would be advantageous to have a considerably more extensive list tentatively approved by the American Standards Association. Even though the committee members might not reach complete accord on a specific figure, they could state the order of magnitude or range and review the list yearly with a view toward revision and establishment of more permanent and specific standards where justified.

F. A. PATTY
Industrial Hygiene Department

A Code for Lighting Mills?

Liberty Mutual Insurance Co
Atlanta, Georgia

Gentlemen: In a movie recently reviewed on "Seeing", the American Recommended Practice for Industrial Lighting, A11-1942, was shown. There also appeared to be a code on the recommended lighting for textile mills. If by any chance you know what this code is I would greatly appreciate a copy.

P. A. SPRINGER
Safety Engineer

• • The American Standard Textile Safety Code, L11-1947, concerns illumination in textile plants.

Company Members

More than 2100 companies hold membership either directly or by group arrangement through their respective trade associations

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Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Single copy, 35¢. $4.00 per year (foreign $5.00). Schools and libraries $3.00 (foreign $4.00). Re-entered as second class matter August 13, 1948, at the post office at New York, N. Y., under the Act of March 3, 1879.

To Our Readers

The limiting adjective "Industrial" has been dropped from our title with this issue, reflecting the broadening range of the national and international standardization programs. STANDARDIZATION expects to continue to give its readers news about standardization in a wide variety of fields—mechanical, electrical, safety, building, consumer goods, company standards, office equipment, photography, radio, and general interest such as nomenclature, abbreviations, and symbols.

Although serving as the official publication of the American Standards Association, the goal of the magazine from the very beginning has been to provide the widest possible coverage of news about standards, not only in the United States but in other countries as well.

The development of the magazine has reflected the development of the standardization program itself. It was first published in 1930 as the ASA Bulletin, soon after the reorganization of the American Engineering Standards Committee into the American Standards Association. In 1933 the name was changed to INDUSTRIAL STANDARDIZATION, in line with its broadening scope.

It is expected that the present change, recognizing one further step in standardization's development, will inaugurate a new era of greater service.

Secretary

Our Front Cover

Quality control laboratory in which photographic chemicals are tested before packaging for use in processing photographic materials. Courtesy Eastman Kodak Company. For article on the new American Standard Specifications for Photographic Grade Chemicals, page 10.

Declaration of Accord

with respect to the

Unification of Screw Threads

It is hereby declared that the undersigned, representatives of their Government and Industry Bodies, charged with the development of standards for screw threads, Agree that the standards for the Unified Screw Threads given in the publications of the Committees of the British Standards Institution, Canadian Standards Association, American Standards Association and of the Interdepartmental Screw Thread Committee fulfill all of the basic requirements for general interchangeability of threaded products made in accordance with any of these standards.

The Bodies noted above will maintain continuous cooperation in the further development and extension of these standards.

Signed in Washington, D. C., this 18th day of November, 1948, at the National Bureau of Standards of the United States.

le D. Howe	Ministry of Trade and Commerce, Dominion of Canada
J. Gellorrow	Canadian Standards Association
T. R. B. Sanders.	Ministry of Supply, United Kingdom
Percy Good	British Standards Institution
Ernest Smith	Representative of British Industry
E. U. Condon	National Bureau of Standards U. S. Department of Commerce Interdepartmental Screw Thread Committee
Fred P. Peters	American Standards Association The American Society of Mechanical Engineers Society of Automotive Engineers
William L. Batt	Sponsors Council of United States and United Kingdom on the Unification of Screw Threads

Standards Improve

Company's Competitive Position

By Vincent De P. Goubeau

THE RCA Victor Division of the Radio Corporation of America is an integral part of the nation's newest large industry—radio, electronics, and television. Its field is rapidly broadening; new and untried areas are invaded constantly. A stream of new radio and electronic devices flows from the engineering laboratories, constantly adding to a widely diversified line of products. The associated procurement and manufacturing task is perhaps one of industry's most difficult problems. It is of vital importance that a new product, although unique in purpose and function, be made up, to the extent possible, of standardized raw materials, parts, and components common to other, older, well-established products.

With standardization exploited to the fullest, the area of virgin territory upon which purchasing must concentrate is reduced to a minimum. Volume is created in many staple items and advance stock buying can be practiced.

Purchasing Department Helpless Without Standards

The effectiveness of a purchasing department in a manufacturing concern is almost completely nullified without the use of a standardizing program. If design engineers or manufacturing personnel specify their needs in accordance with their own whims and without relationship to the over-all problem, satisfactory performance in the way of obtaining materials at the right time, at the right price, in the right quality, becomes almost a hopeless task. Show me an organization which operates on such a basis and I will show you a company which can never be competitive and which will be leading itself to an early liquidation if such practices are continued.

On the other hand, the advantages to a company which makes good use of standards are numerous:

Inventories:—The tying up of a company's finances in extensive inventory is avoided if the use of standards in manufacture is aggressively pursued. A minimum inventory results. The problem of inspection becomes simplified and disagreements concerning quality and interpretation of the article ordered are held to a minimum. The handling of materials also becomes a minor problem when one article is used in manufacturing, rather than numerous variations of that article.

Cost:—How can it be possible for a buyer to procure materials at the lowest possible cost if through variation in specifications it is impossible to place orders in volume quantities with the most efficient producers? Special set-ups for the production of small quantities of varying items can only result in unrealistic costs of production. Related to costs also is the question of a competitive situation. The closer we can operate on the basis of standard commercial specifications in the procurement of necessary materials the closer we can come to good, honest, and effective competition resulting in the lowest possible price and the most dependability.

Availability:—When purchasing items of common standards the problem of supporting production lines becomes a simple one, indeed, because scheduling of deliveries and drawing from inventory stocks is then reduced to a mere clerical function. The use of standard articles also makes possible availability of materials through open market from numerous concerns instead of having to rely on an individual producer.

Cost of the Engineering Function:—The preparation and use of voluminous drawings, necessitating extensive work of draftsmen and other engineering personnel, tend to increase the cost of a product, to say nothing of the administrative work necessary in performing the procurement function. Very often a large personnel is required in carrying on the purchasing function because of the tremendous number of special items to be procured involving numerous details in preparation of blueprints, locating special sources of supply, arranging for unique inspection, etc.

Standardizing in our company is a very active function and is considered of paramount importance. Through the efforts of the standardizing division, in cooperation with the purchasing function, much progress has been made toward achieving the above advantages. Many illustrations could be given. The electronics business is an ever-changing and complex one and a tremendous amount of new development is occurring constantly. The problem, therefore, of holding in check the variations from standards that can occur is a serious one.

***Mr Goubeau** has been Director of Materials, Radio Corporation of America, RCA Victor Division, since 1945. In this paper he tells how company has improved its competitive position through the use of standards, and has gained by avoiding tying up its finances in extensive inventory, procuring materials at the lowest cost, using numerous suppliers, and cutting down detail work in the purchasing department. He cites specific examples of standardization jobs that have resulted in savings. This article is abstracted from a paper presented before the Conference of Staff Executives of Members Bodies of ASA (now the Conference of Executives of Organization Members of ASA) at its meeting October 21. It will be included in full in the booklet "What Good Are Standards?" being published by the American Standards Association.*

The RCA Victor Division represents the manufacturing arm of the Radio Corporation. Within that Division are four separate departments—the Home Instrument Department dealing with consumer radio and television receivers, the Tube Department producing all types of receiving, power, industrial, and other tubes; the Record Department which is engaged in the manufacture and sale of phonograph records; and lastly, the Engineering Products Department which produces transmitters of all types—AM, FM, and television—commercial sound and other electronic items.

Examples of Savings

1. Radio Receivers—A long time ago the radio industry was faced with the problem of standardization in connection with the production of radio receivers. Our Tube Department played an important part in this direction and a very effective job was done in the standardization of tubes for use in radio receivers. The result of this standardization tremendously simplified the problem of radio circuits, and the concentration on a limited number of types with consequent volume of production made it possible to reduce costs to such a degree that receiving tubes are now purchased for a matter of cents rather than three, four, five, or more dollars, as was the case in the early days. The history of progress in the tube portion of our industry would, of itself, present a very interesting and complete story of standardization.

2. Transmitters—The Engineering Products Department manufactures transmitters. A problem was presented of standardizing the appearance as well as the construction of transmitters for radio stations. To this end, a program was started for developing a standard rack and cabinet which would be flexible and yet would be adequate for all the requirements of setting up this type of apparatus in radio stations. Styling, mechanical design, proper utilization of space, and other problems were presented and overcome. Six months of intensive design and coordination work resulted in the adoption of a single standard rack or cabinet with one standard width and depth and seven heights from 42 to 84 inches using a seven-inch modular unit. Since the adoption of this standard, at least 50 equipments in varying quantities have used the standard cabinet units. The purchasing job became very much simplified and thousands of dollars have been saved through its adoption.

3. Dials Used on Radio Receivers—The House Instrument Department was experiencing constant trials and tribulations concerning the dials used on radio receivers. A variety of sizes, shapes, and designs were used for some years. Calibration marks and lines, frequency numerals, and band designations are imprinted in a variety of colors. The purchasing department was constantly in difficulties with suppliers because of variations in colors and our suppliers in turn were in difficulty with our inspection people. Serious study was given to this problem of colors; 40 colors had previously been active. After standardization, the number of colors was reduced to 14. An RCA numbering system was established and a standard name assigned to each color. These sets of color standards were placed in the hands of suppliers and all our styling, purchasing, manufacturing, and inspection people, and design drawings specify colors in accordance with these standards. The difficulties have now all been overcome and color is no longer a problem due to the efforts of standardizing.

4. Insulated Electrical Conductors—Insulated electric conductors are essential in every piece of electrical equipment. Determining the correct wire for a specific purpose involves the consideration of many conditions. By virtue of our varying business, many types of wire are used, and here again the opportunity is present to vary widely their selection. Our standardizing people are presented with hundreds of requests and suggestions for variation from our standards and wherever the proposed usage parallels existing standards any variance is discouraged. Standards have been written for our division covering various wires, and in setting up these standards numerous specifications previously in use were eliminated. An RCA designation identifies the type of wire including a complete specification and the usual process of cancelling other specifications previously in use is followed. The purchasing function again was materially aided in this project and lower cost and lower inventories resulted. Dollar savings resulting from this project are very extensive in the two departments most active in the use of wire, namely, the Home Instrument Department and the Engineering Products Department.

5. Intermediate frequency transformers are used in practically every radio device and through the years thousands of designs have been adopted. Shortly after termination of hostilities of the last war, every manufacturer was faced with the serious problem of reconversion in preparation for resuming peacetime civilian production. The radio industry, like all others, was faced with a serious shortage of materials and components. We were faced with the prospect of being unable to manufacture sufficient transformers for our needs because of the shortage mentioned. We were having serious difficulty in obtaining an adequate supply of aluminum shield cans for these transformers. An investigation developed the fact that on one type we used as many as 41 size variations. Separate tools and separate set-ups of presses to produce these numerous sizes were proving a bottleneck to the producer who already had business many times more than he could handle. In addition to the size problem, variations in notchings, holes, and spacing accounted for as many as 125 different cans in use. Progressive steps were taken to eliminate this problem. The 41 different sizes were reduced to seven, while the problem of variation in notching, holes, etc, was eliminated through the adoption of a few standards. We were then able to obtain an adequate supply, our business became profitable to the producer and, therefore, desirable, and we were able to introduce adequate competition which previously had been impossible. Coincident with the progress made in standardizing shield cans, similar progress was made in the adoption of standards in connection with the transformers themselves. The total number of types of transformers was reduced from 113 to 34.

Improved Competitive Position Through Standardization Program

Resistors, capacitors, and other electrical components have come in for a share of our attention with respect to standardization. The Radio Manufacturers Association, the Institute of Radio Engineers, and the other professional organizations have done a tremendous job in standardizing these items, and this has resulted in great savings to us and to our customers. The same objective was carried out in connection with hardware and other items. Many savings, improved procurement, restricted inventories, all served to assist in giving us an improved competitive position through the aggressive work of the standardizing program.

How to Evaluate Savings From Standards Work

By William Floyd

ALMOST everyone agrees that standardization is "a good thing." Almost everyone agrees that it pays. But no one knows exactly how much. Many "benefits" are listed. Many "before and after" economies are cited in individual cases. But to the best of my knowledge no over-all evaluation of a single standard or of a standardization program has ever been attempted.

Lack of a satisfactory method of evaluation unquestionably places standardization work on the defensive in most companies. We all know the story. Someone in the organization sees the standardization vision—or sees a job for himself in standardization work. He knows that his work will pay dividends. He wants to go ahead with it. He wants to do a job. But half of his time has to be spent "selling," "justifying," and fighting for appropriations.

Contrast this to the position of a salesman. The salesman comes into the front office and says "here is a hundred thousand dollars in signed orders." The profit on them is $10,000—the books of the company prove it. So why quibble about the few hundred dollars selling expense involved in getting this business? Most companies do not quibble about selling expense, as long as business is coming in at a reasonable ratio.

The same thing is true of the production department. Production costs on the new product will be $50,000. The product will sell for $100,000. So there is no question about incurring the $50,000 production expense.

When it comes to standardization, however, the story is different. Few people are impressed by intangible benefits vs tangible costs.

I believe techniques do exist for evaluating standards.

Here is a specific suggestion which may at least stimulate discussion. It is a way to use production standards to evaluate product standards. It should be applicable in any company modern enough to use the standard cost method of cost accounting.

Mr Floyd *is assistant to the vice-president in charge of merchandising, Sears Roebuck and Company. His suggestions for using cost accounting methods to evaluate savings from standards work were made at the meeting of the Company Member Conference October 20. Presented here in abstract form, the paper will be given in full in the booklet "What Good Are Standards?" now being published by the American Standards Association.*

Generally speaking, product standardization means just one thing: Fewer products purchased in the way of materials, parts, or supplies, or fewer products manufactured. (Standardization work may also result in product improvement—the selection of a better product or the actual invention of a better product. Selection and improvement do not *necessarily* have any connection with standardization, however. If they were the only benefits of standardization, we could better put our money directly into testing facilities or into product research.)

The economies of fewer products can easily be reflected in standard cost comparisons. Take the supply room first. The usual claims of standardization are lower inventories, and less purchasing and supply room expense.

It is well within established techniques of standard cost accounting to evaluate these factors. From utilization or demand schedules, it is possible to calculate maximum, minimum, and average unit inventories, together with the number of orders that must be placed in a year's time. From the number of units and their prices, standard inventories can be calculated. From units, orders, receipts, and stock disbursed, together with time-studied ordering, receiving, stocking, and disbursing times, standard operating costs can be calculated. Thus, if a standardization program reduces stockkeeping units by given percentages in different categories, a dollar and cent difference in standard cost, between stocking the larger number of items and the smaller number of items, can be calculated.

"Before and after" comparisons are, of course, subject to changes in many conditions other than the one being measured. They are not very "scientific." But there is no way to get around the implications of a standard cost comparison, even if we merely assume that the calculations were made with technical proficiency.

It is, for example, common practice to evaluate suggested changes in system, or employee suggestions, by the standard cost method. The product simplification resulting from recommendations of a standards department can be evaluated in the same way.

The same principle applies in the factory. In most plants standard costs are already established covering a "change-over" from one product to another. Tool and die costs have been calculated. The "downtime" in changing the production line is known. Training curves, showing the subnormal production of trainees, have been established for learning new work. Hence, in many cases, the data already exists for calculating the difference in standard cost as between a larger and smaller number of products.

These remarks are admittedly an oversimplification. There are advantages to standardization other than fewer products. And the calculation of standard costs is more complicated than my brief outline may imply—as all of you who are familiar with such work well know. But there seems to be no reason, in theory, why the standard cost method is any less applicable to the evaluation of standardization work than to the evaluation of any other claimed economy in purchasing or production.

Canada, UK, U.S. Sign

Agreement on Screw Threads

Sectional committee is making finishing touches on proposed American Standard for Unified Screw Threads to put agreements into effect; 60-degree angle, rounded thread root, new series of limiting dimensions are important features

A LARGE delegation of distinguished visitors from Canada and the United Kingdom, as well as high ranking officials of the United States, took part in ceremonies in Washington, November 18, celebrating agreement on a system of unified screw threads.

Co-chairmen of the meeting were the Honorable E. U. Condon, director of the National Bureau of Standards and chairman of the Interdepartmental Screw Thread Committee, and Howard Coonley, chairman of the Executive Committee of the American Standards Association. Acting as sponsors were four American organizations which had taken an important part in the negotiations leading to the agreement— the National Bureau of Standards, United States Department of Commerce; the Interdepartmental Screw Thread Committee of the Departments of the Army, Navy, Air Force, and Commerce; the Sponsors Council of the United States on Unification of Screw Threads; and the Committee on the Standardization and Unification of Screw Threads, Sectional Committee B1, organized under the procedure of the American Standards Association and sponsored by the American Society of Mechanical Engineers and the Society of Automotive Engineers.

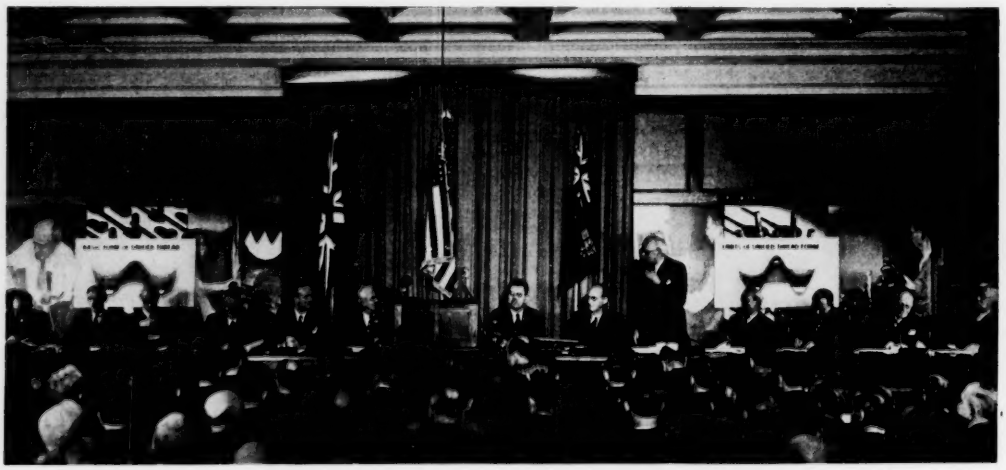
The official delegation for Canada included:

The Right Honorable C. D. Howe, Minister of Trade and Commerce

James G. Morrow, chairman, Canadian Standards Association

Neil P. Petersen, chairman, Screw Threads Standards Committee

F. L. Hayden, representing Canadian Industry



National Bureau of Standards

Delegations from the three countries at the speakers' table at ceremony marking agreement on unified system of screw threads.

Left to right: Percy Good; T. R. B. Sanders; Sir Ewart Smith; C. D. Howe; Sir Oliver Franks (Ambassador of Great Britain); Charles Sawyer (U. S. Secretary of Commerce); Dr Edward U. Condon (Director, National Bureau of Standards); Hume Wrong (Ambassador of Canada); Howard Coonley, (chairman, Executive Committee, American Standards Association); Donald Carpenter (chairman, Munitions Board); William L. Batt; James G. Morrow; David R. Miller (Interdepartmental Screw Thread Committee). Frank P. Tisch, Vice-Chairman, B1 Sectional Committee, does not appear in the picture.

The delegation from the United Kingdom was made up of:

Sir Ewart Smith, representing British Industry

T. R. B. Sanders, Minister of Supply of Great Britain and chairman, Engineering Standards Coordinating Committee

Percy Good, director, British Standards Institution

H. L. Griffiths, British Standards Institution

Addresses by William L. Batt, chairman of the Sponsors Council, the Honorable Donald M. Carpenter, Chairman, Munitions Board, and the Honorable Charles Sawyer, U.S. Secretary of Commerce, together with reports of representatives of the cooperating government and industry committees, were features of the meeting.

A declaration of accord was signed by the delegations of the three countries, agreeing that standards for the unified screw threads in the publications of the British Standards Institution, the Canadian Standards Association, the American Standards Association, and the Interdepartmental Screw Thread Committee will "fulfill all of the basic requirements for general interchangeability of threaded products."

The unified system has been approved by the American groups through the ASA Sectional Committee on the Standardization and Unification of Screw Threads, B1, which developed it from the American point of view. The committee is sponsored by the American Society of Mechanical Engineers and the Society of Automotive Engineers. The committee, which developed the new proposal as a revision of the American Standard approved in 1935, is now putting the final editorial touches on the document.

The features of the Unified Screw Thread standard will be included in the new standard to be published by the Interdepartmental Screw Thread Committee, which as the representative of the Army, Navy, Air Force, and Commerce Departments is charged with compiling the handbook, Screw Thread Standards for Federal Services.

The British Standards Institution is publishing a new British Standard incorporating the unified system. The Canadians, whose main interest has been to get one standard instead of two, have also adopted the new standard.

The three principal characteristics of screw threads are angle and form of thread, the number of threads per inch for the various series of thread diameters, and the tolerances and allowances (or limiting dimensions on sizes of threads) for the three classes of thread fits ("loose," "medium," and "close").

National Bureau of Standards

William L. Batt, president of SKF Industries and chairman of the Sponsors' Council, explaining the new standards to Dr Henry B. Allen, director of the Franklin Institute, Philadelphia. New threads for nuts, bolts, and screws will be pitched at 60 degree angle, and have rounded roots and flat tops.

The British system, originated by Whitworth in 1845, is based on a thread angle of 55 degrees with a thread form having rounded crests and roots. The American system, developed by Sellers in 1864, has a thread angle of 60 degrees with a thread form having flat crests and roots. The number of threads per inch for the various series of thread diameters is the same in both systems, with the exception of the half-inch coarse thread. These differences between the systems made trouble because accurate fits between components having different thread angles is impossible; moreover, tolerances and allowances vary.

The unification agreement provides a 60-degree angle and a rounded root for the threads. The crest of the thread may be flat, as preferred in American practice, or rounded, as preferred by the British. The number of threads per inch for the various series of thread diameters above $\frac{1}{4}$ in. has been unified, except for $\frac{1}{2}$ in., where the American Standard will include both the 12 thread UC and the 13 in. NC, and the limiting dimensions for three classes of fit have been agreed upon. Thus, interchangeability of screw thread parts, now becomes feasible.

The unification was brought about through conferences originally arranged during World War II by the Combined Production and Resources Board. The American member of the CPRB was William L. Batt, president of SKF Industries, who served through the war as vice-chairman of the War Production Board and took great interest in the unification plan. After the war when the CPRB was abolished, Mr Batt continued to give the work his special attention in his capacity as chairman of the Sponsors Council, which he organized as a result of the interest of industrial management in the unification plan. The Council is made up of representatives of the American Society of Mechanical Engineers, the Society of Automotive Engineers, and the American Standards Association.

The first of the conferences arranged by the Combined Production and Resources Board was in 1943, and the foundation was laid at that time for the standards to be agreed on through the procedures of the national standardizing bodies.

One of the final meetings was held in July of 1948 when a British delegation visited the United States and tentative agreements were reached on basic mathematical formulas for tolerances and allowances.

As a basis for the agreement, a program of research was carried out by the National Bureau of Standards, the National Physical Laboratory of England, and the National Research Council of Canada.

(*Continued on next page*)

In making the unification effective, it has been announced, purchases by the three governments will be based on the new standards, but industrial use within each of the nations will require a change in industrial practices, involving engineering, design, tooling, and production. Such a change will take time, but the transition should be completed in the next few years.

Future cooperation in the field of screw thread standardization is expected to have two aspects: first, the extension of the unified system to the other English-speaking nations (all of which use the English system of measurement in manufacture) and, second, the continued development of standards. Standards are not static; they must keep pace with improvements in materials and methods of production and inspection developed in industry. Reduction in the variety of fasteners is one of the possibilities that may be realized as the result of further studies of standards and simplification.

The present agreement pertains to the most commonly used type of screw thread. Other important types of screw threads, such as the buttress and the acme, remain to be standardized. Standardization of drawing room practices within the countries and unification among the countries are also essential if there is to be a thorough understanding by each country of the production drawings of the others. It is planned that the three Governments and the national standardization organizations—the British Standards Institution, the Canadian Standards Association, and the American Standards Association—will carry on continuing programs in these and in related fields.

News in Brief

● Because of the ambiguous use of names for certain preservatives and wood coatings used by its members, the National Door Manufacturers Association has adopted names and definitions for five different kinds of products that are often confused with one another.

● Standards for laminated thermosetting decorative sheets have been approved by the National Electrical Manufacturers Association. They include standard grades, thicknesses, tolerances, and various tests for resistance to wear, boiling water, high temperatures, stains, for colorfastness, for moisture and dimensional change, and a section devoted to the application of decorative laminates.

● Seven standard samples of rubber-compounding ingredients which were used in the Government synthetic rubber program have been added to the list of Standard Samples supplied by the National Bureau of Standards to industrial and scientific laboratories. Requirements of the Government synthetic rubber specifications are now predicated on the use of these standard samples for stress-strain testing of synthetic rubbers.

● A step toward establishing uniformity between maritime nations on the procedure for handling perishable cargoes has been taken by the publication of a pamphlet by the American Society of Refrigerating Engineers. Covered are such topics as the conditions peculiar to marine transport, classes of refrigerated ships, methods of packing, types of containers, and the temperature and relative humidity at which common perishables should be held.

● The Latin-American Conference on Forestry and Forest Products adopted a resolution urging the Food and Agriculture Organization of the United Nations, in consultation with Latin-American governments, to seek to introduce standard grades, specifications, and sizes for the different Latin-American forest products entering into international trade, in the interests of both producers and consumers.

● Increasing production of standard model freight cars, as contrasted with cars built to individual specifications, has been reported by the American Railway Car Institute. The largest gain in building of this new type of car is through the elimination of the time loss due to changeover from one type of car to another, says the ARCI.

● A petition has been presented by the National-American Wholesale Grocers' Association to the Commerce Department's Division of Simplified Practice for an industry conference to discuss the physical aspects of a redesigning program for food packages. Major objective of such a program is the adoption of shipping container sizes which will lend themselves to standardized pallets, now being increasingly used in the distributing field.

● A general plan for establishing American television transmitting standards in foreign countries is being developed by the Radio Manufacturers Association. Since receivers must be made to conform to transmitting standards, RMA believes that the establishing of such standards is of fundamental importance in preparing future markets for television sets.

● W. J. Goodwin, Jr. was elected president of the Structural Clay Products Institute at its recent Convention. Rand Rogers will serve as vice-president.

● Alvah Small, president of Underwriters' Laboratories since 1935, was elected vice-chairman at a special meeting of the Board of Trustees. Curtis R. Welborn, executive vice-president, will be president.

● A total of 150 compounds, prepared through a cooperative program of the National Bureau of Standards and the American Petroleum Institute begun in 1943, are now available as NBS standard samples of hydrocarbons for calibrating analytical instruments and apparatus in the research, development, and analytical laboratories of the petroleum, rubber, chemical, and allied industries. A complete list may be obtained from the National Bureau of Standards, Washington 25, D. C.

● Tests of greige and dye-finished nylon stockings will be conducted by the U. S. Testing Company, Inc. for the Independent Association of Stocking Manufacturers, to determine conformance or non-conformance with the Voluntary Minimum Construction Standards for the Manufacture of Full Fashioned Nylon Stockings, developed by the Association a year ago. This is part of the Association's new Certification of Product plan which is expected to go into effect about May 1, 1949.

● B. W. Clark, vice-president in charge of sales for the Westinghouse Electric Corporation, was elected president of the National Electrical Manufacturers Association at the 22nd Annual Meeting in November.

Sweden Reports On Modular Coordination

Report published by the building section of the Swedish Standards Association suggests ten centimeter square grid as basis for coordination, corresponding closely to four-inch standard grid used in United States

THE problems connected with building and construction are of international concern today, as is the progress made by any one group. Because of this, a report on modular coordination prepared by the building section of the Swedish Standards Association (Byggstandardiseringen) is of special interest.

One of Sweden's principal social problems is the high cost of housing. In spite of the fact that the percentage of income paid out for rent is often disproportionately large, the majority of families in Sweden's cities live in small apartments of only one or two rooms.

In order to make possible a reduction in manufacturing costs for housing, Byggstandardiseringen has undertaken a general standardization program within the building industry. Thus far, this program has led to the establishment of a Swedish standard for wooden doors and windows. Work on these standards revealed, however, that it would be necessary to establish a number of general regulations governing the dimensions of materials and building elements forming part of the skeleton frame, installations, or fittings before standardization of details could be carried further. Such materials and parts are, of course, joined together in the building process to form a whole—the building. If waste and cutting and fitting are to be avoided, all component dimensional units must be related to a single accepted system. True rationalization of the building industry must be based upon coordination of dimensions, it is explained.

Since the coordination of dimensions was of primary concern to the building materials industry, Byggstandardiseringen applied in the Autumn of 1943 at the suggestion of Joran Curman, architect, to the Federation of Swedish Industries for funds with which to undertake a research project. The Federation thoroughly understood the importance of the work, and building materials manufacturers affiliated with the Federation contributed approximately 35,000 Swedish crowns toward the working out of a tentative basis for modular coordination.

This publication is the result of Byggstandardiseringen's research project. Its primary object has been to determine the module size best adapted to Swedish conditions. In this undertaking, special attention was paid among others to the following points:

1. The module size chosen had to be small enough to permit flexible layout and an aesthetically pleasing dimensioning and proportioning of buildings and building components.
2. The module size had to be sufficiently large to make possible reasonable limitation of the variety of sizes required in the standardization of different building parts.
3. The module size selected had to be such that adoption of modular dimensioning for products would cause the building materials industry a minimum of expense.
4. It was felt that, insofar as possible, Swedish modular coordination should conform to the corresponding standards adopted in other countries.
5. It was felt that in order to make them easy to apply, modular standards should be as simple as possible. For the same reason, the module size should be indicated by a simple number.

The suggested basis for modular coordination is a ten centimeter square grid. This corresponds very closely to the four inch standard grid which is the basis for modular coordination in the United States.[1]

This report covers studies on dimensions undertaken for the majority of building materials and parts. Usually modules of different sizes have been tested and the best one subjected afterwards to a more thorough investigation. The project has led to the module standards proposed in this report. Most of the suggestions put forward should be regarded as preliminary, since the research could not be sufficiently thorough to be immediately acceptable as a basis for detail standardization. The object of these studies has been merely to make a survey of the advantages and disadvantages of different module sizes and to determine to what extent modular coordination in general would simplify detail standardization.

[1] This is the standard size recommended in the American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945.

Entitled Byggstandardiseringen's Modulutredning, *the report is by Lennart Bergvall and Erik Dahlberg, architects, and is published, in Swedish, by the Federation of Swedish Industries. Copies may be ordered from Albert Bonnier Publishing House, 605 Madison Avenue, New York 22, New York at $3.50. An English translation of the text and figure titles is available but should be studied together with the original Swedish edition, as the illustrations and diagrams therein are necessary for an understanding of the text. The English translation sells for $4.20; the two volumes may be purchased together for $7.70.*

More *Light* on the Subject

New lighting techniques have brought a new approach to the subject of illumination. Proper coordination of all of the elements within a child's view is now the goal in school lighting. How to establish a good balance in classroom brightness indicated in recommended practice.

MORE and more, school administrators are demonstrating the fact that they are keenly aware that lighting conditions for their students are far from good. No longer do they ask, "Why should we improve the students' visual environment?"; today, they ask, "How shall we proceed with their visual environment improvement program?" The American Standard Practice for School Lighting[1] just approved, represents the best concerted thinking today as an answer to that question.

With the introduction of fluorescent lighting in 1939, bringing increased efficiency of light sources, the entire philosophy of illuminating engineering has changed. Where such thinking was formerly in terms of the lighting problem alone, now the emphasis is in terms of the whole illuminated environment. For example, dark ceilings, desks, and floors, which were once selected for cheaper maintenance, have given way to the use of lighter colors and woods in ceilings, walls, chalk boards, desks, and floors. This blending of all of the elements in the field of view not only increases the proper diffusion of light but has a definite psychological value as well. Today, illuminating is good when it creates general environmental brightnesses agreeable and beneficial to the user, and permits a high degree of efficiency in seeing the necessary tasks with a minimum of effort.

Many features of a classroom are provided for in the standard practice. For the first time in a publication of this type, specifications for maximum fixture brightness and limiting brightness ratios, in addition to footcandle tables, are set forth. To guide the school superintendent in selecting a visually comfortable interior decorating scheme, recommended reflectance values for desks, floors, walls, and ceilings are given which, with a good distribution of light, will assure properly balanced brightnesses between these areas in the classroom.

Illumination results to be expected from a number of lighting installations, employing both incandescent and fluorescent sources, are indicated. Here, the committee made no specific recommendations regarding preference for one type of lighting method over another. The committee tried to use both types equally throughout the standard, leaving the designers and the education group to decide, on the basis of a cost comparison, which type they would specify for their own use. A complete expense analysis form is included in the Appendix for this purpose.

The section devoted to natural lighting is particularly interesting. There are two important factors encountered here—one is availability of natural light, the other, its controllability. Through the use of maps and charts, the amount of sunshine to be expected during the winter school months in various parts of the country is indicated, while the relative merits of various fenestration techniques and daylight controls, including directional glass blocks, venetian blinds, metal louvers, and diffusing screens, as a means of protecting students from excessive window brightness, are explained.

The importance of adequate wiring for today's and tomorrow's needs is stressed in an Appendix, and the proper wire sizes are suggested for typical conditions to serve as a guide for the school architects.

While this document, technically speaking, is a revision of a standard that has been in use for many years, actually the new edition has been completely rewritten to keep up with advances made in the technique of lighting in schools. Published under the procedure of the American Standards Association, with the Illuminating Engineering Society and the American Institute of Architects as co-sponsors, a committee representing widely diversified interests approved the standard. Among them, such groups as the Electric Light and Power Group, the National Bureau of Standards, the National Council on Schoolhouse Construction, the National Safety Council, and the U. S. War Department, Service Supply and Procurement Division, Specifications, Inspection and Standards Section. It is interesting to note that the American Committee on Optics and Visual Physiology representing three national ophthalmological groups has approved the illumination levels recommended in this standard practice.

With school administrators facing the largest rehabilitation and building program in this country's history, a program estimated in excess of ten billion dollars, the 1948 edition of the American Standard Practice for School Lighting assumes special importance as a much needed authoritative guide.

Illuminating Engineering Society

This is an all luminous ceiling with light sources shielded by louvered areas.

[1] American Standard Practice for School Lighting, A23.1-1948.

IES Coordinates Lighting Activities

AS the coordinating group for all types of scientific research, investigation, and study on lighting techniques, the Illuminating Engineering Society serves as the primary authority, through which the most advanced information on the art and science of illumination can be obtained.

Through sectional and regional meetings, the engineer, the educator, the architect, the scientist, the business executive, and any one else interested in the problem of illumination may exchange experiences on technical lighting developments. In the work of 80 technical committees, members may take an active part in the interpretation of the vast amount of collected data for the benefit of the industry as a whole. IES Recommended Practices, Standards of Procedure, or techniques for the solving of specific lighting problems are developed as the result of their activities. Often the Recommended Practices are submitted to the American Standards Association for consideration as future American Standards. The recently approved American Standard Practice for School Lighting, A23, described on the opposite page, offers an excellent example of this procedure.

In 1918, the IES first prepared a "Code of Lighting School Buildings." In 1923, the American Standards Association (then the American Engineering Standards Committee) organized a sectional committee on school lighting, inviting the IES and the American Institute of Architects to become co-sponsors. This committee produced its first American Standard in 1924, using the IES standard as a basis. From time to time, revisions were made. The latest was started in 1944 when the School Lighting Committee of the IES undertook to revise it. The finished draft was submitted to the ASA sectional committee in 1947, and the standard was approved as American Standard in 1948.

Similar procedures have been followed in arriving at other American Standards:—for example, the American Recommended Practice of Industrial Lighting, All-1942; American Standard Practice for Street and Highway Lighting, D12.1-1947; and American Standard Illuminating Engineering Nomenclature and Photometric Standards, Z7.1-1942—all sponsored by the IES.

The use of illuminating equipment to assure the proper lighting of different tasks and different types of interiors presents an endless number of difficulties. Realizing that there is a great need for solution of these problems, many IES committees devote much time and attention to the study of particular industry situations. At present, there are study projects under way to obtain information on what constitutes proper lighting and how best to obtain it in a number of industries. Among them are the canning, clothing, cleaning and dyeing, leather manufacturing, printing, textile, shoe, and woodworking industries. Other committees are assigned to consider the individual difficulties in the control of light, in designing lighting equipment, in the best use of light sources, daylighting, in the use of color and illumination, and in lighting of public buildings, private institutions, sport, and recreational areas. These are only a few of the many technical subjects now under investigation. Special reports on this work are issued from time to time.

Information on developments in the field reach members through *Illuminating Engineering*, the official organ of the Society. By publishing all reports, technical papers, and Society Transactions, this magazine provides a complete and authoritative reference on the subject of illuminating engineering.

In addition, Lighting Data Sheets, describing actual lighting installations are published in a yearly series. Each sheet represents the solution for a particular lighting problem and contains the pertinent engineering data, illustrations, and line drawings. The Sheets are indexed under a number of commercial, industrial, and residential classifications. These data Sheets are finding wide use among architects and engineers and are considered valuable tools in extending the principles and theories of planned lighting.

Much of the technical and scientific data is brought together in a one-volume reference guide—the *IES Lighting Handbook*. First issued in 1947, it was reprinted in 1948, and is currently scheduled for revision and reissue in 1950.

Companies Support National Standards Work

From July 1 to November 1, the following companies joined the American Standards Association to take an active part in the national standardization program:

American Broach and Machine Company, Ann Arbor, Michigan
Avco Manufacturing Corp, New York
Baker Brothers, Incorporated, Toledo, Ohio
Bloomsburg Mills, Incorporated, New York
Bonny Forge and Tool Works, Allentown, Pennsylvania
Cone Automatic Machine Company, Incorporated, Windson, Vermont
Cooper Alloy Foundry Company, Hillside, New Jersey
Eddy Valve Company, Chicago, Illinois
Fox, Wells and Company, New York
Gisholt Machine Company, Madison, Wis.
Gotham Hosiery Company, Incorporated, New York, New York
Hego Fabrics, Incorporated, New York
Hill Acme Company, Cleveland, Ohio
Hydraulic Press Manufacturing Company, Mt Gilead, Ohio
International Telephone and Telegraph Corporation, New York, New York
Iowa Valve Company, Chicago, Illinois
Kerotest Manufacturing Company, Pittsburgh, Pennsylvania
Lit Brothers, Philadelphia, Pennsylvania
M and H Valve and Fittings Company, Anniston, Alabama
John Morrell and Company, Ottumwa, Iowa
Pacific Division Bendix Aviation Corporation, North Hollywood, California
Pacific Valves, Incorporated, Long Beach, California
Pipe National Company, Chicago, Illinois
Rafael M. D. Demartimo, Sao Paulo, Brazil
Ravena Iron Company, Ravena, New York
Research Corporation, New York
Robertson Factories, Inc, New York
Rockford Machine Tool Company, Rockford, Illinois
Schwarzenbach Huber Company, New York
William Skinner and Sons, New York
Stehli and Company, Inc, New York
Sun Shipbuilding and Dry Dock Company, Chester, Pennsylvania
Susquehanna Mills, Inc, New York
Van Raalte Company, Inc, New York
Yarnall-Waning Company, Philadelphia, Pennsylvania

Standard Quality of Photographic Chemicals To Improve Picture Processing

By Carroll V. Otis

A report of the ASA Subgroup on Photographic Grade Chemicals which developed the new American Standards establishing criteria of purity for chemicals used in processing photographic materials.

PHOTOGRAPHIC processing inherently involves chemical operations which require adequate purity of the chemicals to attain a high standard of photographic quality. As a result, it has been found desirable to set up standards of purity for "photographic grade" chemicals to meet the requirements of the various sensitive materials and processes. These chemicals fall into groups according to their use or chemical nature: developing agents, alkalies, sulfites, restrainers and antifoggants, fixing agents, acids, hardeners, and a group of miscellaneous chemicals.

Standards for these "photographic grade" chemicals take into consideration the fact that in some instances the photographic criteria may permit more of certain impurities than could be allowed for pharmaceutical chemicals or analytical reagents whereas in other cases even small traces of chemical impurities that would be unimportant in other uses may be extremely harmful in photographic processing.

The ASA Committee on Standardization in the Field of Photography, Z38, soon after its organization recognized this need for specifications covering chemicals used in processing photographic materials. In 1940 it asked the Subcommittee on Processing and Processing Equipment, No. 8, to consider this project. The late Dr S. E. Sheppard of the Kodak Research Laboratories, a member of Subcommittee 8 and representative of the American Chemical Society on Sectional Committee Z38, was asked to undertake the preparation of preliminary drafts of specifications for the chemicals commonly listed in published photographic processing formulas.

Standards for 52 chemicals are now listed by the committee having been prepared with the aim of establishing minimum standards of purity for photographic grade chemicals. All are not available in approved form at the present time, however. Twenty-four standards received final approval on July 12, 1948 and are now available in published form. It is anticipated that 24 more will be available in approved and published form early in 1949. Of the 52 chemicals listed at present, approximately 25 have fairly wide usage in processing formulas while the remaining 27 have limited or specialized use. As the need arises, specifications defining photographic grade will be considered for additional chemicals.

Photographic Grade Defined

The term *photographic grade* refers to chemicals in which impurities known to be photographically harmful are limited to a safe quantity, while inert impurities are restricted to amounts that will not reduce the required assay strength. In general, the chemical tests and analyses of the specifications are intended to indicate the presence of photographically detrimental impurities which might occur in the production and supply of the chemicals.

Instances of harmful types of substances which are limited in appropriate chemicals by these specifications are the following: (1) chemical reducing and sulfiding agents which can initiate fog or stain when present in developers, (2) chemical reducing and sulfiding agents which can produce fog or stain when present in fixing baths, (3) powerful restraining agents, (4) excessive silver halide solvents in developers, (5) catalysts capable of accelerating the deterioration of photographic solutions, and (6) precipitate-forming compounds and insoluble matter.

In some cases no reference has been made in the specifications to substances known to be harmful. Such references have been omitted to eliminate unnecessary testing on the part of those using the specifications. This was decided upon after testing currently supplied material and consulting with manufacturers on present methods of manufacture. Thus arsenic which even in traces is known to cause deterioration of acid fixing baths was not specifically limited in several of the specifications after manufacturers and suppliers assured the committee that the chemicals as produced and supplied for photographic use at the present time are free from this impurity.

Specifications Based on Existing Data and Research

The specifications take into account existing data in the U.S. Government Specifications (comprising U.S. Federal Specifications and U.S. Treasury Department Procurement Division Specifications), in the An-

Carroll V. Otis, *of the technical staff of the Eastman Kodak Company, is a member of Subcommittee 8 on Processing and Processing Equipment of the ASA Sectional Committee on Standardization in the Field of Photography, Z38, represents the American Chemical Society on the sectional committee, and since October, 1946 has served as Acting Chairman of the Subgroup on Photographic Grade Chemicals which prepared these specifications.*

alytical Reagent Specifications of the American Chemical Society, and in the U.S. Pharmacopoeia. Considerable use has been made of the facilities and testing methods of the leading American manufacturers of chemicals and photographic film and paper. Reference has been made to manufacturing and purchase specifications which have been made available by producers and suppliers of photographic chemicals.

The specifications for the organic restrainers and the developing agents (with the exception of four for which there were existing U.S. Government Specifications) were developed as a result of research carried on by members of the Subgroup on Photographic Grade Chemicals which Dr Sheppard organized to draft the specifications. It is hoped eventually to add assay procedures to the specifications for the developing agents but it was felt that, since the present specifications are generally agreed to be quite satisfactory, they should not be held up until the necessary research and testing could be completed.

It has been necessary for the present to omit reference to any specific technique for determining melting points in the American Standard specifications for the developing agents and organic restrainers due to the lack of a widely used, generally accepted, and reproducibly accurate method. As a result, melting point ranges are wider than would otherwise be desirable. In the past, certain Federal Specifications have referred to the method described in the U.S. Pharmacopeia for the determination of melting points for Class I solids using ASTM calibrated thermometer E 1 (2C-39). Attention of the USP Committee on Revision was called early in 1946 to the experience of members of the Subgroup on Photographic Grade Chemicals indicating that this method, when followed strictly in accordance with the instructions, does not give satisfactorily reproducible results when employed by different operators or when different equipment is involved. The National Bureau of Standards concurred that this USP technique was unsatisfactory. We understand that they are working on the design for a standard melting point apparatus incorporating the use of a copper block with precision controls. When such an apparatus has been designed and approved and is commercially available, reference can be made to it for melting point determinations in the American Standard specifications. At that time it may be possible to narrow the melting point ranges specified.

Specifications in Terms Of Chemical Tests

The chemical tests and analyses have been assembled from the above and other sources, modified when required, tested, and correlated with photographic requirements. While it is considered that the chemical methods of testing are adequate in most cases, in view of present knowledge, it is recognized that the ultimate criterion of satisfactory quality is the successful performance of a given chemical in a use test, that is, in the recommended formula with a given sensitive material and under the prescribed conditions of use.

The methods of analysis, as given in the specifications, in general do not require the use of special apparatus or equipment. If an equally accurate and generally recognized method exists, its use is allowed as an alternate. An exception to this should, however, be noted where the tests bear the requirement "to pass test." In these instances alternate methods should not be employed.

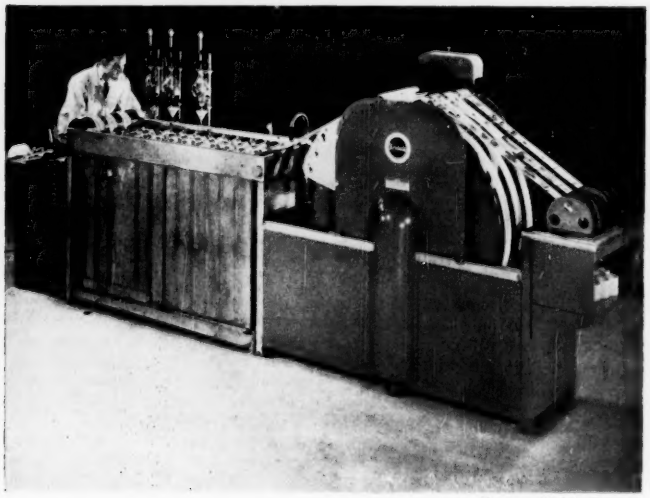
Reagents used in making the tests should be recognized reagent grade chemicals normally used for careful analytical work. These chemicals should generally meet the Recommended Specifications for Analytical Reagent Chemicals of the American Chemical Society.

Specifications Widely Circulated Prior to Final Approval

The preliminary drafts of these specifications were prepared by the Subgroup on Photographic Grade Chemicals of Subcommittee 8 on Processing and Processing Equipment, consisting of Dr S. E. Sheppard, chairman, and Messrs E. Aponte, A. Ballard, J. I. Crabtree, A. W. M. Dickens, F. A. Gillice, F. J. Hopkinson, L. Martinson, L. E. Muehler, C. V. Otis, J. M. Patek, R. L. Sherwood, and H. J. Vick, all of the Eastman Kodak Company.

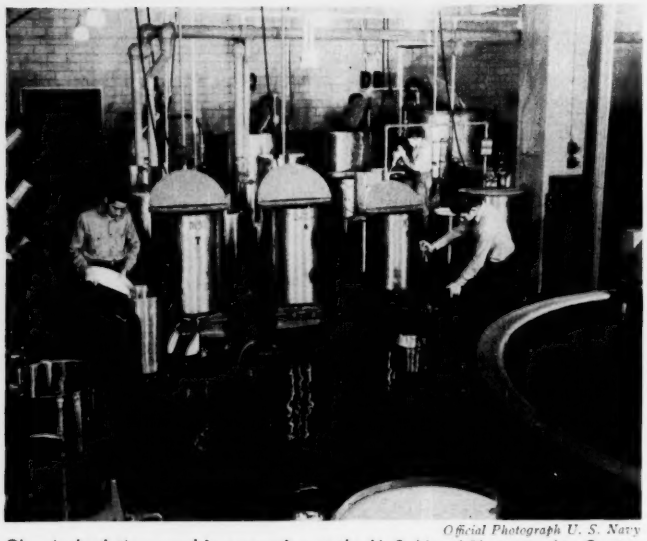
The preliminary drafts were submitted for comment to the members of Subcommittee 8 of Sectional Committee Z38, and to a number of manufacturers and suppliers of photographic grade chemicals. On the basis of comments received, the specifications were then revised by the above committee, prior to their submission to Sectional Committee Z38 for approval. All comments received have been considered and the changes made have been approved by Subcommittee 8 also.

The proposed specifications were sent by the American Standards Association to a list of 35 organizations not represented directly on Sectional committee Z38 at the same time that they were sent to the members of the committee for letter ballot. Although it was realized that this list did not include every group that might have an interest in these specifications, it was felt that it was sufficiently representative to include adequate cov-



Eastman Kodak Company

Continuous paper processors, now used by many photofinishers, need processing solutions compounded from carefully controlled chemicals.



Official Photograph U. S. Navy

Chemical solutions used in processing at the U. S. Naval Photographic Center at Anacostia, D. C. are prepared under carefully controlled conditions.

erage. In a number of cases still further changes have been made in the specifications prior to their final approval, as a result of the comments received from these organizations and the members of committee Z38.

New Standards Already Being Used

A number of manufacturers and suppliers of photographic chemicals have indicated that they are already making extensive use of the proposed specifications, which they received for comment, either in reviewing existing manufacturing or purchase specifications or in setting up new specifications. It is generally felt that the specifications can be used to advantage as the basis of quality control of the chemicals by manufacturers, suppliers, and the larger consumers. In this connection it is pointed out that the new specifications establish minimum requirements for photographic grade chemicals. Several manufacturers and suppliers have indicated that they plan to continue to maintain for their own purposes somewhat tighter specifications. One organization reported that, partly as a result of reviewing the proposed specifications, it has become a member of the American Standards Association.

Two organizations at first indicated that their materials, which they had been supplying for some years, would not quite meet requirements contained in two proposed specifications and suggested that perhaps the requirements in question should be modified. The reasons for the proposed requirements were then discussed and both organizations replied that they would approve the specifications in their present form and that they were taking steps to modify their manufacturing processes so as to meet the specifications. One has already informed the committee that a change was made in manufacturing procedure and that its material will now consistently meet the American Standard specification involved.

A large manufacturer of a key chemical questioned one of the test procedures contained in the proposed specification, indicating that they preferred another procedure which they had used for some time. It was pointed out that the test procedure in question was not in common use and that some time would be required to circulate and secure approval of the revised procedure. Since the organizations represented on both Subcommittee 8 and Sectional Committee Z38 had already indicated that the proposed specification was satisfactory, the manufacturer agreed to its adoption with the understanding that the alternate procedure would be given early consideration by the subcommittee.

Another supplier has already revealed plans to label bulk photographic chemicals supplied in accordance with the approved American Standard specifications as "American Standard Photographic Grade." It should be pointed out that this designation probably should not be applied to packaged formulas unless all of the ingredients are covered by approved American Standard specifications.

A number of concerns have expressed the hope that the approval of the American Standard specifications defining and establishing photographic grade chemicals would result in a single universally accepted standard for each chemical for use in processing photographic materials. In particular, it has been hoped that there would be no conflict between U.S. government specifications and corresponding American Standard specifications. There is a general feeling that the government specifications should now refer to the applicable American Standard specifications for detail requirements and chemical test procedures. We are pleased to note that the revised Federal Specification for Hydroquinone (O-H-886a) and the proposed Federal Specification for Potassium Ferricyanide, which have been under consideration during the past two years, are both based almost entirely on the drafts of the proposed American Standard specifications for the same chemicals available at the time. The revised U.S. Army Specification for Photographic Film and Paper Developer Powders (75-423-A) indicates that, where chemicals are not specifically covered by other specifications, they should be of quality conforming to the current issue of any standards for photographic chemicals established by the American Standards Association. The above indications, even before the new standards were finally approved, are most gratifying.

Value of the Standards

It is believed that general adoption of the new American Standard specifications for photographic grade chemicals will prove very helpful by (1) establishing a distinctive grade of chemicals for use in processing photographic materials, (2) providing manufacturers, suppliers, and consumers with uniform standards of quality, (3) providing more satisfactory reference standards to cover the ingredients used in supplying packaged formulas covered by government specifications (some reference has been made to CP and USP grades in the past), and (4) giving manufacturers of sensitized materials assurance that their materials will be processed in formulas compounded from chemicals of satisfactory qual-

ity. It is recognized, of course, that the formulas and techniques employed are of at least equal importance in processing.

The new specifications have of necessity been based largely on data available on the requirements of the processes normally employed in black-and-white photography, since at the time the project was undertaken the requirements of the color processes were not too clearly defined. Consideration has been given to the requirements for motion picture processing including reversal processing. Indications at the present time are that the present specifications are entirely adequate insofar as use of the chemicals in existing color processes is concerned. The specifications have not taken into account specilalized uses of certain chemicals, as in the blue print field.

The specifications will automatically come up for revision or reaffirmation after a period of three years and can be revised sooner if necessary.

Result of Cooperative Effort

At this point a word of commendation is in order for all members of the Subgroup on Photographic Grade Chemicals, listed above, who have given generously both time and effort over a five-year period in making these specifications possible. Messrs Ballard and Martinson prepared the initial draft of the test procedures for the specifications for each group of chemicals; Messrs Aponte and Sherwood have done much of the checking, editing, and proofreading of the specifications as each successive revision was prepared; Mr Dickins prepared the initial drafts of the specifications for the developing agents; and Mr Muehler prepared the original proposal as to specification requirements and also the first drafts of the Foreword and Index, and the specifications for the organic restrainers. Special commendation is due the Eastman Kodak Company for having made available the personnel, data, and testing facilities without which the present specifications could not have been developed.

The members of the Z38 Subcommittee on Processing and Processing Equipment also merit commendation for the time and effort devoted to the development of these standards. J. I. Crabtree, chairman of the subcommittee, has continuously fostered the project in an advisory capacity both in the subgroup referred to above and in the meetings of both Subcommittee 8 and Sectional Committee Z38. H. A. MacDonough has

American Standard and Proposed American Standard Specifications for Photographic Grade Chemicals

The standards in this list which have year dates following their designation numbers are approved American Standards and copies may be obtained from the ASA office at 25 cents per copy. Those standards lacking year dates are proposed American Standards, not yet available.

I.	*Developing Agents*	
1.	Mono-Methyl-Para-Aminophenol Sulfate (Armol, Elon, Genol, Graphol, Metol, Photol, Pictol, Rhodol, Veritol)	Z38.8.125-1948
2.	Hydroquinone (Para-Dihydroxybenzene, Quinol, Hydrochinone, Hydroquinol)	Z38.8.126
3.	2, 4-Diaminophenol Hydrochloride (Acrol, Amidol, Dianol, Dolmi)	Z38.8.127-1948
4.	Para-Hydroxyphenylglycin (Athenon, Glycin, Iconyl, Monazol)	Z38.8.128
5.	Para-Aminophenol Hydrochloride (Kodelon, P.A.P.)	Z38.8.129-1948
6.	Pyrogallic Acid (1,2,3-Trihydroxybenzene, Pyro, Pyrogallol)	Z38.8.130-1948
7.	Catechol (Ortho-Dihydroxybenzene, Pyrocatechin, Pyrocatechol)	Z38.8.131-1948
8.	Para-Phenylenediamine (1,4-Diaminobenzene)	Z38.8.132-1948
9.	Para-Phenylenediamine Dihydrochloride (1,4-Diaminobenzene Dihydrochloride)	Z38.8.133-1948
10.	Chlorhydroquinone (2-Chlor-1,4-Dihydroxybenzene, Adurol, C.H.Q.)	Z38.8.134-1948
II.	*Alkalies*	
1.	Sodium Hydroxide	Z38.8.225-1948
2.	Potassium Hydroxide	Z38.8.226-1948
3.	Sodium Carbonate, Monohydrate	Z38.8.227-1948
4.	Sodium Carbonate, Anhydrous	Z38.8.228-1948
5.	Potassium Carbonate	Z38.8.229-1948
6.	Sodium Tetraborate	Z38.8.230-1948
7.	Sodium Metaborate	Z38.8.231-1948
8.	Ammonium Hydroxide	Z38.8.232-1948
III.	*Sulfites*	
1.	Sodium Sulfite	Z38.8.275-1948
2.	Sodium Bisulfite	Z38.8.276
3.	Potassium Metabisulfite	Z38.8.277-1948
IV.	*Restrainers and Antifoggants*	
A.	*Inorganic*	
1.	Potassium Bromide	Z38.8.200
2.	Potassium Iodide	Z38.8.201-1948
3.	Potassium Chloride	Z38.8.202-1948
4.	Sodium Chloride	Z38.8.203-1948
B.	*Organic*	
1.	Benzotriazole	Z38.8.204-1948
2.	5-Methylbenzotriazole	Z38.8.205-1948
3.	6-Nitrobenzimidazole Nitrate	Z38.8.206-1948
V.	*Fixing Agents*	
1.	Sodium Thiosulfate, Anhydrous	Z38.8.250
2.	Sodium Thiosulfate, Crystalline	Z38.8.251
3.	Ammonium Thiosulfate	Z38.8.252
VI.	*Acids*	
1.	Acetic Acid, Glacial	Z38.8.100
2.	Sulfuric Acid	Z38.8.101
3.	Citric Acid	Z38.8.102
4.	Boric Acid, Crystalline	Z38.8.103
5.	Hydrochloric Acid	Z38.8.104
6.	Sodium Acid Sulfate, Fused	Z38.8.105
7.	Acetic Acid, 28 Percent	Z38.8.106
VII.	*Hardeners*	
1.	Aluminum Potassium Sulfate, Crystalline	Z38.8.150
2.	Chromium Potassium Sulfate, Crystalline	Z38.8.151
3.	Formaldehyde Solution	Z38.8.152
4.	Paraformaldehyde	Z38.8.153
VIII.	*Miscellaneous*	
1.	Sodium Sulfate, Anhydrous	Z38.8.175
2.	Sodium Acetate, Anhydrous	Z38.8.176
3.	Potassium Dichromate	Z38.8.177
4.	Potassium Permanganate	Z38.8.178
5.	Potassium Ferricyanide	Z38.8.179
6.	Copper Sulfate	Z38.8.180
7.	Potassium Persulfate	Z38.8.181
8.	Sodium Sulfide, Fused	Z38.8.182
9.	Ammonium Chloride	Z38.8.183
10.	Ammonium Sulfate	Z38.8.184

cerefully checked each draft of each specification and has promptly supplied many helpful suggestions regarding the specifications. Subcommittee 8 has the following personnel:

J. I. Crabtree, *Chairman*, Kodak Research Laboratories, Representing the Society of Motion Picture Engineers
John M. Centa, Defender Division, E.I. du Pont de Nemours & Co
Walter Clark, Kodak Research Laboratories, Representing American Committee of the International Congress of Photography.
E. S. Cobb, U.S. Navy
Joseph Schantz (Alt) U.S. Navy
Raymond Davis, National Bureau of Standards
Robert M. Jackson, Signal Corps
Allen M. Rahm (Alt) Signal Corps
C. W. Kendall, Air Materiel Command
Fred S. Schmitt (Alt) Air Materiel Command
B. A. MacDonough, Ansco
Ira Current (Alt) Ansco
C. V. Otis, Eastman Kodak Company, Representing American Chemical Society
I. Reddig, Eastman Kodak Company
N. J. Moyes (Alt) Eastman Kodak Co
John R. Weber, Remington Rand, Inc., Representing Photographic Society of America
R. J. Wilkinson, Master Photo Dealers' and Finishers' Assn
L. E. Howlett (Liaison) Canadian National Research Council, Representing Canadian Standards Association

Most of the organizations contacted have shown an excellent spirit of cooperation by reviewing the proposed standards and supplying information and comments promptly. This has been greatly appreciated by those preparing the new standards. Although space would not permit listing all who have submitted valuable comments, I cannot pass up the opportunity of expressing the appreciation of all concerned for the comments received from R. D. Wastrom, American Cyanamid Company.

Eastman Kodak Company

To control activity of developers, determination of acidity or alkalinity of the chemicals used is required.

C. A. Mazzuchelli, Carus Chemical Company, Inc; L. J. Manniello, Church and Dwight Company, Inc; W. W. Sunderland, The Dow Chemical Company; T. T. Hill, The Edwal Laboratories, Inc; F. Von Hessert, Fairmount Chemical Company; W. E. Watson, General Chemical Company; T. R. Aalto, Heyden Chemical Corporation; Fred C. Bowman, A. R. Maas Chemical Company; C. E. Cosby, Mallinckrodt Chemical Works; Daniel P. Shedd, Merrimac Division, Monsanto Chemical Company; A. M. Matheson, Niacet Chemicals Division, U. S. Vanadium Corporation; M. H. Pickard, Pacific Coast Borax Company; F. Howard Hedger, Charles Pfizer and Company; Frank R. Dunn, Rohm & Haas Company; H. Von Bramer, Tennessee Eastman Corporation; and H. W. Dingee, Zinsser & Company, Incorporated.

The committee hopes that these standards will prove of value to all concerned with chemicals for processing photographic materials.

The new American Standards for photographic grade chemicals are part of a large program of standards for photography being developed by the ASA Sectional Committee on Standardization in the Field Photography, Z38. One hundred thirteen standards have already been completed and approximately 43 are now under consideration. This committee works under the sponsorship of the Optical Society of America, and has a membership that is broadly representative of manufacturers, distributors, and users of photographic materials and equipment, and technical experts in the photographic field.

Comments on the new American Standards for photographic grade chemicals, and suggestions for additions, are invited. Please address the American Standards Association, 70 East 45th Street, New York 17, N. Y.

Plan Project on Architectural Drafting

The development of standards for the methods and practices used in architectural drafting will be undertaken by a new sectional committee of the American Standards Association as soon as adequate funds are available for the work.

Indirectly, this project has come about because of the many requests received by both the ASA office and the American Institute of Architects (who will serve as sponsor of the committee) for information on standards concerned with architectural drafting. When those making the requests were informed that there was no American Standard on this subject, a number of comments and suggestions were received indicating that such a standard would be desirable.

These suggestions led the ASA office to conduct a survey in 1947 to determine the need for a standard covering the requirements of the modern architectural drafting practice. From approximately 200 letters of inquiry sent to architects, contractors, and schools, 95 percent of the architects and contractors contacted replied in favor of such a project, while practically 100 percent of the architectural schools were also in favor and many stated that the need for such a standard was urgent.

The results of the survey were placed in the hands of the AIA in June 1948. At its Annual Meeting in Salt Lake City, the AIA then resolved that should the ASA propose to organize such a sectional committee the Institute would "accept the invitation of the ASA to act as sponsor of the project, provided no considerable financial obligation is incurred in so doing."

The project has now been officially organized but will not proceed with a plan of action until sufficient funds are in prospect for the work.

Propose Specifications For the Interchange of Semitrailers

TECHNICAL specifications for the construction of semitrailers so they can be used interchangeably by different motor carriers are being prepared by the Equipment Advisory Committee of the American Trucking Associations, Incorporated.

The technical specifications to be developed will relate to the design, construction, and installation of small parts of semitrailers which must have uniform mating characteristics so that the trailers can be easily interchanged without field alterations. Currently, only one item has been standardized—the fifth wheel king pin.

Among the parts and constructions to be specified are sizes of semitrailer bodies. It appears that three sizes may be possible for dry freight transportation, with each size having a relation to its construction features and to the design of the tractor used to haul the individual type of semitrailers. For example, one length of semitrailer may be optimum in three-axle combinations of two-axle tractors and single-axle semitrailers. Another length may best fit four-axle combinations of two-axle tractors and two-axle semitrailers. Still another may be optimum for five-axle combinations of three-axle tractors and two-axle semitrailers of the type common in the eleven western states.

The matter of semitrailer floor strength received considerable attention at the first meeting of the Equipment Advisory Committee of the American Trucking Associations in October. The committee decided that a floor strength which will permit the use of fork lift trucks in trailer bodies should be specified because of the increasing use of material handling equipment by motor carriers and shippers.

In order to permit the fifth wheel on tractors to be of uniform height, a standard height of fifth wheel plates on semitrailers is to be specified. Joined with the fifth wheel king pin location, there is to be prescribed a location of semitrailer landing gears which will provide adequate clearance between the landing gear and the rear frame extension of the tractor.

During committee discussion on tire and rim sizes, the majority opinion appeared to favor the use of 10.00—22 size. Current practices indicate a fairly evenly divided use between spoke wheels and disc wheels. Since 22-inch tires can be mounted on either spoke wheels or disc wheels in cases where a semitrailer may be operating on a foreign line, specifications for these wheels may not be developed. It is planned to recommend only one size of tire because tire size has a pronounced effect on body floor height and the committee hopes to develop a uniform floor height for semitrailer body floors.

In types of power brake systems, the committee was divided between air brakes and vacuum power brakes. However, there appeared to be a definite trend toward recommendations on air brakes for the four and five-axle combinations.

The topic of brake jumper hose couplers found the committee favoring the use of automatic shut-off type of hose couplers, but with the proviso that the resistance of such couplers should not be greater than that of a nonautomatic shut-off coupler. A uniform location for brake hose couplers is to be developed with the trailer manufacturers. For the lighting of semitrailers, an increase in the number of electrical circuits to seven circuits was discussed. Seven circuits would provide a circuit for interior body lamps, back-up lamps, or other special purpose lamps which are used intermittently. By using seven circuits, it also would be possible to divide the circuits of the tail lights and clearance lamps on the rear of the body so that a failure of one circuit would not extinguish all of the lights on the rear of the body. The seven circuit proposal would include two circuits for directional signals.

When the matter of circuits is settled, there will be consideration of new designs of electric cable plugs and sockets which will permit interchange of trailers without field alterations of wiring. It is expected that all units will be equipped with a plug and socket containing contacts for directional signals, even though directional signals may not be required in certain states. In this way, one vehicle without directional signals can be coupled to one with directional signals without requiring an alteration. A uniform location for the electrical cable socket above the brake hose coupler was proposed.

Hubodometers may be an optional recommendation in the final specifications.

Four subcommittees were appointed to prepare drafts of specifications on four divisions of the overall specifications for interchange semitrailers. The subcommittees were directed to have reports for presentation at the time of the Spring Meeting of the ATA Equipment and Maintenance Council.

Charles Phelps Cushing

In order that semitrailers may be used interchangeably by different motor carriers, a committee is at work on uniform construction specifications.

American Standards Insure *Quality and Economy* In Highway Construction

By H. F. Clemmer

Mr Clemmer, chairman of the ASA Sectional Committee on Road and Paving Materials, A37, is Engineer of Materials with the Department of Highways in Washington, D. C. Sponsor of this project is the American Society for Testing Materials.

Mr Clemmer here tells how the more than 50 American Standards for road and paving materials just approved by the American Standards Association help manufacturer, producer, distributor, and consumer alike. Use of these Standards will result in more miles of higher quality pavement, he says. The standards recommended by the committee include standards developed by both the American Society for Testing Materials and the American Association of State Highway Officials.

FOR decades, highway engineers have been searching for those materials which will best meet the exacting requirements of durability, serviceability, and economy. This search has involved not only those materials meeting the above requirements, but some criterion that might be expeditiously used in classifying a given construction material into those categories. Various technical agencies versed in the intricacies of these problems, such as the American Association of State Highway Officials and the American Society for Testing Materials, endeavored to reach satisfactory conclusions independently.

As early as World War I, it became apparent that standardization of test methods for highway construction materials and standard material specifications were necessary. Although specifications and test methods in use by the various engineering authorities were overlapping and, in many cases, identical for all practical purposes, there was confusion among manufacturers and contractors. This confusion existed because specifications were many and varied and emanated from numerous agencies such as State Highway Departments, Federal Agencies, Army, Navy, American Society for Testing Materials, and the American Association of State Highway Officials.

Material requirements and test methods have been defined within definite limits by the Public Roads Administration where Federal funds are used in conjunction with the highway expansion program. Continued Federal assistance has increased the need for American Standards. With the recent approval of more than 50 American Standards for road and paving materials, a new era of understanding by all interested groups will result in a mutually beneficial and coordinated program in the highway engineering field.

Of these newly approved standards, sixteen are specifications for road and paving construction materials, 49 are specifications for test methods to determine the suitability of various road and paving materials, and three deal with pertinent subjects.

A further analysis shows that 26 of the standards pertain to concrete and concreting materials. Such considerations as durability of aggregates, methods of testing concrete specimens to determine quality, test methods to determine extent of impurities in aggregates, slump tests to determine workability of concrete, gradation tests for aggregates, specific gravity and absorption of aggregates, and numerous other variables that determine the ultimate quality of concrete are included here. Seven of the standards involve soils and soil cement mixtures; nine cover general items such as specifications for preformed expansion joint fillers, specifications for subgrade paper, specifications for cotton-curing mats, and other materials of construction used on road and paving projects, while bituminous paving materials are covered in 26 standards. Such items of importance as recommended practices for inspecting bituminous paving plants, a test on distillation of asphaltic cutbacks, a test method for determining the percentage of bitumen in bituminous mixtures, and test methods for determining the characteristics of asphaltic cements are among the latter.

The standards as adopted have the advantage of having been closely scrutinized and studied on a national basis by qualified highway engineers. The approval represents a consensus of all interested groups including manufacturers, distributors, and consumers. Consideration of technical requirements necessitated that the standards be broad enough to allow latitude within limits, and yet rigid enough that the limits as adopted would insure satisfactory field performance without losing the perspective of economy. Proper discernment on this plane could only be reached by the invaluable experience of all groups directly involved. Standards thus benefit industry, sales organizations, contractors, and consumers by reflecting the problems encountered by these groups in the adoption of a standard that surmounts any serious opposition of a single group.

Manufacturers should be able to profit by increased production and lower costs, since the complexities of varied material specifications will be largely eliminated. With the knowledge that a single product will satisfy their customers, the manufacturer can standardize equipment, improve existing facilities, and, in some cases, reduce the amount of machinery necessary to meet the demands of the public. This will reduce overhead and maintenance costs, and, in fact, provide the con-

Charles Phelps Cushing

Durability, serviceability, and economy are the purpose of American Standards for road and paving materials. This close-up of work on the West Side Highway in New York City shows modern methods of laying a concrete road.

sumer with a more desirable finished product at a lower price.

Distributors will feel the effects of accepted standards. Increased competition among the manufacturers will provide selling organizations with an abundance of materials suitable to all markets. No longer will it be necessary to procure from several manufacturers to meet the market demand. Should a single producer be unable to supply local demands, the distributor can seek new sources of supply with the certainty that the material will meet specifications. Large inventories will be unnecessary with uniform specifications.

The consumer, which ultimately means the taxpayer in highway construction, will be assured of quality, high performance, and uniformity in the construction materials. The actual cost of state or municipal roadways will be reduced since lower production costs will be passed on to the contracting party. Stoppages of work resulting from a dearth of materials will probably be relatively rare with more producers manufacturing materials meeting standard specifications.

American Standards are not stagnant. Continuous study and research by interested groups evolve new methods of tests and new construction materials. Such groups as the American Society for Testing Materials, American Association of State Highway Officials, American Concrete Institute, Highway Research Board, Public Roads Administration, and the American Public Works Association, through their research, make recommendations for new specifications and revisions of existing standards which are taken under advisement by Sectional Committee A37. All standards have to be reviewed and reapproved every three years.

American Standards are a milestone in highway engineering which results in benefits to producer, distributor, and consumer alike. Among these benefits are reduced costs, coordinated evaluation of the latest technical research, and incorporation of the best materials to satisfy the requirements of durability, serviceability, and economy. These standards will result in increased miles of higher quality pavements.

W. C. Wagner

Wagner and Townsend Elected As Standards Council Officers

J. R. Townsend

W. C. Wagner of the executive department, Philadelphia Electric Company, has been elected chairman of the Standards Council for 1949. He had been serving as acting chairman since October of last year when L. F. Adams, then chairman of the Council, died suddenly.

J. R. Townsend, Bell Telephone Laboratories, will be the new vice-chairman.

Mr Wagner has served on the Standards Council since 1924, representing the Electric Light and Power Group. During the war, as captain, USNR, on duty in the Bureau of Ships, Research and Standards Division, he represented the Navy on the Council.

Over the years, he has participated actively in the growth of the ASA. He has been chairman of the Board of Examination, vice-chairman of the Company Member Conference, and a member of the Board of Review. He is also a member of the U. S. National Committee of the International Electrotechnical Commission.

Before coming to the Philadelphia Electric Company, Mr Wagner was associated with the Stone and Webster Engineering Corporation and served as a member of the staff of the National Bureau of Standards in the Standards Division.

J. R. Townsend, the new vice-chairman, is materials engineer with the Bell Telephone Laboratories, Inc. He has represented the American Society for Testing Materials on Standards Council for some time. He is also a member of the Mechanical Standards Committee and the Board of Review.

After experience with the Bethlehem Steel Company and the Mathematics and Dynamic Branch of the U. S. Army Ordnance Department in World War I, he became a member of the technical staff of the Western Electric Company. From 1925 through 1944 he was materials standards engineer of the Bell Telephone Laboratories, Inc, becoming materials engineer in 1945.

He has served as consultant for the National Research Council, the War Production Board, and other war agencies, and is a past president of the ASTM.

Books Relating To Standardization

Rules for Welding Piping in Marine Construction (American Welding Society, 33 West 39th Street, New York 18, N. Y., 25¢)

By publication of this document, the American Welding Society has endeavored to effect a uniformity in the classification and basic welding requirements for piping of the governing agencies in the shipbuilding industry. Since issuance of the first edition in 1938, these Rules have represented agreement among these governing agencies and the shipbuilders themselves. In this new edition, two important points have been revised and thereby classified—materials, and classification of piping.

NFPA Handbook of Fire Protection. 10th Edition (National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts, $9.50)

The tenth edition of the NFPA Handbook presents information on fire prevention and protection. It covers both life safety from fire and the protection of property. This is a completely new edition containing up-to-date information, a good deal of which represents developments that were made during the war—in industry, in fire prevention, and in fire extinguishment. It represents two years' work on the part of the NFPA staff, with the assistance of more than 100 expert consultants. It is expected that the Handbook will be a useful reference for experienced fire protection engineers, inspectors, and property owners.

Radio at Ultra-High Frequencies. Volume II (RCA Review, Radio Corporation of America, RCA Laboratories Division, Princeton, New Jersey, $2.50)

This is the eighth volume in the RCA Technical Book Series and the second on the general subject of radio at the higher frequencies. Volume I covered the period 1930-1939; the present volume includes the years 1940-1947.

Papers are presented in seven sections: antennas and transmission lines; propagation; radio relays; microwaves; measurements and components; and navigational aids. As additional sources of reference, the appendices include a bibliography in the field of ultra-high-frequency radio, and summaries of all papers appearing in Volume I which is now out of print.

The Metric System of Weights and Measures (Bureau of Publications, Teachers College, Columbia University, New York, N. Y., $3.00)

This is the twentieth in the series of Yearbooks started in 1926 by the National Council of Teachers of Mathematics. It attempts to supply a comprehensive view of metric usage at the present time as reported by some sixty individuals and numerous organized groups active in widely varied fields, and by the American press. It surveys the history, nature, and advantages of the metric system, which the Council believes is most popular with teachers of mathematics and science. The Yearbook also offers specific programs for its adoption both in general use and in the classroom throughout the United States and British Commonwealth.

Ionospheric Radio Propagation, National Bureau of Standards Circular 462 (Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., $1.00)

This book has been prepared by the Central Radio Propagation Laboratory of the National Bureau of Standards in order to meet the need for an elementary presentation of the theory and practical use of radio-wave propagation involving the ionosphere.

It is, in part, a revision and expansion of the IRPL Radio Propagation Handbook that was prepared during the war at the request of the Armed Services. Current knowledge and techniques of making radio-propagation calculations are summarized, and much of the material that has been included has appeared heretofore only in the form of reports that have had a limited circulation. The theoretical treatment is by no means comprehensive but is intended to explain the basic facts and principles of electromagnetic-wave propagation and the ionosphere for persons who have not had advanced courses in electrodynamics.

Preparation of the volume represents one of the completed projects of the Central Radio Propagation Laboratory of the National Bureau of Standards. This laboratory is charged with the function of centralizing within the United States all information on radio propagation. It operates, either directly or by cooperative arrangement, a large number of ionospheric stations that furnish many of the data on which knowledge of propagation conditions is based. It is responsible for the reduction, analysis, and interpretation of the data from these stations and is also charged with responsibility for observational and theoretical research on the propagation of radio waves.

Publications of the National Bureau of Standards. Circular 460 (Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., 75¢)

All Bureau publications from 1901 to June 30, 1947, are listed in this circular. These include mathematical tables, building materials and structures reports, circulars, handbooks, commercial standards, simplified practice recommendations, research papers, and miscellaneous publications. Brief abstracts for the publications issued from January 1, 1942, to June 30, 1947, are also included.

Dryseal Pipe Threads. Vol III, No. 3 of Die Headlines, (Eastern Machine Screw Corporation, Truman and Barclay Streets, New Haven 6, Connecticut)

This organization has prepared a publication on the Dryseal Pipe Thread which describes the features of the thread, how it works, its specifications, and methods of gaging, in what the corporation considers to be a more understandable form than the present printed specifications.

Public Administration Organizations—A Directory 1948 (Public Administration Clearing House, 1313 East 60 Street, Chicago 37, Illinois, $3.50)

This is the sixth edition of this directory of voluntary unofficial organizations working in the general field of public administration in the United States and Canada. It is similar in scope and arrangement to preceding editions, the changes being chiefly those necessary to bring the directory up to date.

The directory is designed to guide public officials and others concerned with government problems to sources of useful information and to identify organizations which impinge upon or affect public administration. All of the organizations listed can be placed in one of the following categories: organizations of or for public officials and administrators; professional and technical societies; citizen organizations.

Other Books For a Standards Library

ASTM Standards on Bituminous Materials for Highway Construction, Waterproofing and Roofing (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pennsylvania, $3.00)

ASTM Standards on Copper and Copper Alloys (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pennsylvania, $4.35 per copy, $5.00 cloth binding)

ASTM Standards on Mineral Aggregates, Concrete, and Nonbituminous Highway Materials (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pennsylvania, $2.25)

ASTM Standards on Plastics (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pennsylvania, $4.50)

ASTM Standards on Textile Materials (With Related Information) (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pennsylvania, $4.35)

Bibliographic Survey of Corrosion-1945, By Robert D. Misch, James T. Waber, and Hugh J. McDonald (National Association of Corrosion Engineers, 905 Southern Standard Building, Houston 2, Texas, $5.00)

Directory of the American Coordinating Committee on Corrosion-4th Edition, (National Association of Corrosion Engineers, 905 Southern Standard Building, Houston 2, Texas, $2.00)

Measurement of Radioactive Isotopes, By Leon F. Curtiss, NBS Circular 473 (Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., 5¢)

Survey of Automatic Arc and Gas Welding Processes as Used in the Automotive Industry (American Welding Society, 33 West 39 Street, New York 18, N.Y., 30¢)

Frank H. MacMillen

Frank H. MacMillen, who had been Director of Information at the American Standards Association until November 1947, died on November 16.

Previously, he had been a financial news writer with the *Wall Street Journal*, the *Associated Press*, and the *New York Times*.

Code for Pressure Piping To Be Revised

American Society of Mechanical Engineers announces reactivation of committee under American Standards Association procedure. New code to appear in 1950.

THE American Standard Code for Pressure Piping, safety standard for all steam and power services, is to be completely revised within the next two years, according to Frank S. G. Williams, new chairman of the committee which functions under ASME sponsorship. At an organization meeting, October 1, 1948, attended by representatives of more than thirty cooperating bodies, Mr Williams, who is General Manager of the Eastern Division of Taylor Forge and Pipe Works, announced plans for bringing the code abreast of current developments in the field of materials, design and construction.

Originally organized in 1926, the committee includes representatives of groups primarily concerned with safety of high-pressure piping systems. Members-at-large are recognized experts in the piping field. Sabin Crocker, Consulting Engineer of Ebasco Services, Incorporated, is vice-chairman, and L. W. Benoit of the Manufacturers Standardization Society of the Valve and Fittings Industry is secretary.

In his charge to the committee, Mr Williams emphasized the character of the Code as a safety code rather than a design specification. He stressed the need for making periodic interpretations when necessity arises.

The present high reputation enjoyed by the Code depends on the judicial character of the committee as a court of review. The large membership of the committee represents a cross section of public interest.

Committee operations will be directed, he explained, by an executive committee composed of chairmen of subcommittees, plus three to five members-at-large. This group would establish policies, supervise and coordinate, arrange publication and distribution of the Code, administer the subcommittee work, and maintain liaison with other code-making bodies.

Specific subcommittees were appointed to revise sections of the Code (1) power piping systems, (2) gas and air piping systems, (3) oil piping systems, (4) district-heating piping systems, (5) refrigeration piping systems, (6) fabrication, and (7) corrosion-service piping. A second group of subcommittees include (1) materials and stresses, (2) standards and identification, (3) instrument piping, (4) mechanical design, (5) liaison with ASME Boiler Code Committee, and (6) welding procedures and qualification.

Thus the chairman announced, technical subjects which cross all fields of service, such as instrument piping and mechanical design, will be handled by separate technical committees. It is proposed to recognize liaison with other code-making bodies as a major function and responsibility to eliminate overlapping of jurisdiction and achieve uniformity. For example, the committee will continue to look to the American Society for Testing Materials for solutions to materials problems. A special committee on welding will keep its attention focused on developments in that field that affect the code.

The ASME Boiler Code Committee already has formed subcommittees to establish allowable stresses for materials. It is proposed to cooperate with this group rather than duplicate the activity.

An editing committee is charged with responsibility for uniformity of style and an indexing system for subject matter in each section of the code under uniform numerical references. This subcommittee also reviews incoming questions dealing with interpretation, makes a canvass of opinion among other subcommittees, and recommends action to the executive committee. Interpretations may then be published as official interpretations of the code.

The field of "corrosion-service" piping is new to the committee. It includes stainless steel, nickel, Inco alloys, aluminum, and copper. These materials, their use, and methods of fabrication differ from steel to an extent that separate handling is justified. The chairman also suggested special study of the problems of operation at very low temperatures, below —20 F not now a part of the code.

The executive committee will meet at six-week intervals until the work is well under way. All communications should be addressed to the secretary, L. W. Benoit, Manufacturers Standardization Society, 420 Lexington Avenue, New York 17, N. Y.

Australia to Consider Standards for Its Dairy Industry

A Dairying Standards Committee has been organized by the Standards Association of Australia in keeping with a recommendation made at the British Commonwealth Standards Conference in 1946. At that time it was recommended that a central authority should be established in each country of the Commonwealth to deal with standards and specifications pertaining to the various aspects of the dairy industry. A Dairy Products Reviewing Committee already in existence in Australia was disbanded in favor of this new committee.

At its first meeting on July 21, the new committee decided that the scope of its activities would include a study of the following subjects: Babcock and Gerber methods and apparatus for the estimation of fat; determination of freezing point of milk; sampling of dairy products; chemical analysis of butter, cheese, and casein; microbiological examination of dairy products; farm sterilizing plant, milking machines, and associated rubber and synthetic rubber tubing and fittings, and milk piping and fittings; washing and associated conveying machinery for churns (cans), bottles, etc; wrappings and packages for dairy products; detergents; salt, rennet, annatto; cheese bandages and cloths, butter muslins, filter pads; milk-cans; milk-bottles and cartons; milk-strainers and filters.

World's Needs Call for Standards To Define "Fitness for Use"

British Standards Institution director states in interview

During a visit to London this summer, the editor of STANDARDIZATION spent some time with the staff of the British Standards Institution. In interviews with Mr Percy Good, director of the BSI, the philosophy of standardization, being put into practice under Mr Good's leadership, was discussed.

Mr Good has been with the BSI for over 20 years and has been director since 1946. In addition to his leading position in standardization work, Mr Good has a high reputation as an electrical engineer. This was given recognition in his election last year as president of the Institution of Electrical Engineers. During the war he performed important service for the government in developing lighting for emergency use. For his wartime services, Mr Good was made a Commander of the Order of the British Empire (CBE).

THE grim experience of the war and the harsh realities of postwar shortages and economic difficulties are reflected in the trend of standardization in Great Britain. The British Standards Institution, oldest of all national standardizing bodies, is leading the way along the path that many of the other associations will undoubtedly follow. In a visit with Percy Good, director of the British Standards Institution, in London this summer, he explained how he envisions the future development of standardization in the light of postwar conditions.

Materials and productive capacity are scarce in terms of the potential needs of an increasing world population, Mr Good explained. Outside of the United States practically the entire world needs rebuilding—new factories, new machinery, new housing, new clothing, new household equipment, adequate food. Society cannot afford to waste either its limited materials or productive capacity in products that fail to give satisfactory service or wear.

A.C.K. Ware Ltd.

The BSI sales department distributed 450,000 copies of standards last year.

The first objective of standardization, therefore, as Mr Good sees it, is to provide definitions (specifications and methods of test) by which a product's "fitness for use" can be determined, and by which it can be made known to the purchaser.

This is particularly important since so many commodities have been offered for sale whose "use value" cannot be assessed by the buyer. A housewife cannot tell by looking at it whether she can use an electric toaster without fear of shock or fire; she cannot tell by looking at the outside of a can what its contents are; she cannot know how a synthetic material will wash or whether the colors of a textile will fade in laundering. As a result, the laissez-faire slogan "Let the buyer beware" no longer can be considered to be in effect, and the object of a standardization program must be to provide a system of weights and measures that will enable the producer and consumer to state clearly in terms both understand what can be expected of the product.

One phase of this problem is to define the economic level of "fitness of purpose." Is it better economy, for example, to save 5 percent in the cost of a product through the use of lighter steel sheets that will use less material at the moment but may rust away in half the time, or to use a heavier sheet that will last longer but will be more costly in both material and money now? Or, after a standard is agreed upon, how can its economic value be assessed? A standard may call for 12 and 14-inch girders, eliminating a 13-inch girder for economy in production. In analyzing the use to which the girder is to be put, however, it may be found that a 13-inch girder is the exact size needed for safety. Is it better economics then to use the standard 14-inch girder, sacrificing the unneeded material, or is it better economics to sacrifice the standard and save the material by using the nonstandard 13-inch size? Three economic experts are now working on this question for the BSI.

Another phase of this problem, and one of the most urgent needs today, is to develop methods of test for the significant properties of materials and products. What, in terms of the use value of a piece of cotton material, does a tensile strength test mean? How does one test the strength of a glass tumbler?

As agreements are reached on standard methods of test, agreements can also be reached on standard methods of expressing the result in terms of the job that is needed. This, Mr Good explained, directly affects the standard of living. One of the world's problems is due to the fact that mechanization of industry tends to lower the cost of labor by producing more in less time and with less manpower. On the other hand, raising the standard of living means raising the cost of labor since a larger income is needed by a larger group if the products that go into

making a higher standard of living are to be purchased. By setting standards for production and for the "use value" of the products purchased, the value received will help to keep these two conflicting forces in balance, he said.

Certification that a product meets the standards set is another step in the standardization program. To obtain adequate control, this must be carried out in the producers' factories, Mr Good believes, as is now done through the BSI certification program. (The certification program of the BSI will be discussed in the next issue.)

Consumer Goods Program Seen As Big Field for Future Work

In its search for an answer to these problems, the British Standards Institution is carrying on a program which has been evolving since the organization of the BSI in 1901. First concerned almost entirely with standardization in mechanical and electrical engineering, the scope of the organization broadened until during World War II it found itself being called upon to develop standards on which the government could base its allocation of materials. This responsibility not only included the well recognized engineering fields but went into the field of consumer goods. Under this program, standards were provided for such kitchen equipment as pots and pans; and minimum standards for construction and materials of low-price "utility" clothing still have an effect on the life of every British woman. Even now, three years after the end of the war, every clothing manufacturer must put a certain percentage of his production into "utility" garments. The list of consumer goods standards includes, in addition to sizes for women's dresses, blouses, and lingerie, a standard for shrinkage on laundering of woven cotton and linen fabrics, definitions of fabrics, and standards for such household equipment as electric refrigerators, electric wash boilers, clothesline posts, electric lamps, plugs and sockets, color cards, wallpaper, rubber rings for preserving jars, and kitchen measuring cups and spoons.

The BSI sees this work on consumer goods as one of the big developments for the future. It is a difficult one, the staff admit, but one that they believe has great possibilities for service to the national economy. They now have "in project" (that is, in the preliminary planning stage) an Advisory Committee on Distributive Standards which would cover consumer goods. The groups having a special interest in this committee will be the large retail stores that are responsible for what is put on the market for the ordinary consumer. Here again, the state of the national economy is in question. In a country which must keep every available machine at work to produce textiles needed for use at home and for export, how can standard sizes (for example) be effective, since many of the existing machines will not produce these sizes?

The same problem faces the BSI and the country in the case of standards for building materials and equipment. An imposing program of building standards was developed during the war as a basis for minimum quality of materials and equipment in houses financed by the government. Scarcities of material have made it well-nigh impossible to insist on the use of standards in many cases.

In its search for means of producing more economically, the British government has set up "working parties" to consider labor methods and manufacturing conditions and to make recommendations as to how the different industries can be improved, and how output can be increased. Many of these working parties have now made their recommendations and invariably have included a suggestion that some measure of standardization be introduced as a means of maintaining standard quality and increasing production (in textiles, for example, less variety would mean larger runs and would eliminate changes in the machines).

They have also included performance standards, certification, and marking. Some of the subjects on which these recommendations have been made have covered furniture, heavy clothing, light clothing, unshrinkability, fastness of colors, standard widths, antimoth impregnation.

The Government is now in the process of trying to implement these reports. It is proposed that a Development Council should be formed in each industry, made up of employers, workers, and users of the material. The work of these councils would be financed by industry. Those now being planned cover glassware, crockery, boots and shoes, brooms and brushes, lace, hosiery, and cutlery. The government departments concerned are encouraging the industries and the Development Councils as they are formed to request the British Standards Institution to handle the development of the standards recommended. A committee on waterproof clothing is now being set up by the BSI as a result of such a request.

The scope of work of the British Standards Institution is indicated in the names of its Divisional Councils, similar to the correlating committees of the American Standards Association. These are Building, Chemical, Engineering, and Textile. Each has a number of Industry Standards Committees working under it, with technical committees, subcommittees, and panels under them. In addition, 337 special subjects are under development which do not fit under any of these Divisional Councils. These

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Sir William Larke, KBE, vice-president of the British Standards Institution, presiding at a meeting in the Council Room at the offices of the Institution.

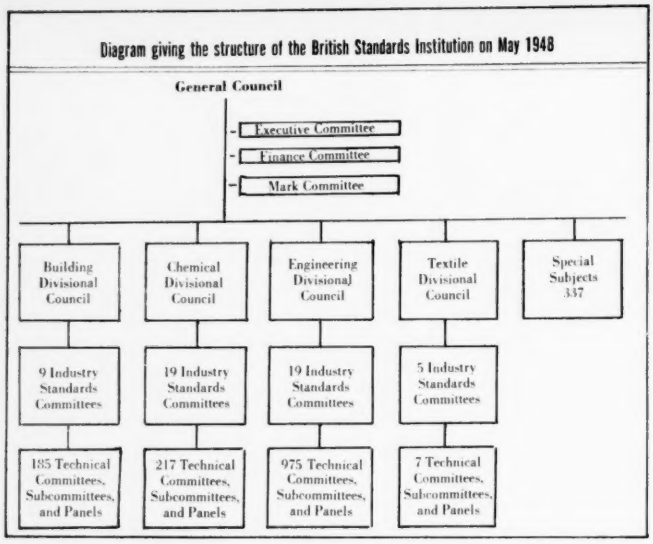
Diagram giving the structure of the British Standards Institution on May 1948
General Council
Executive Committee
Finance Committee
Mark Committee
Building Divisional Council
Chemical Divisional Council
Engineering Divisional Council
Textile Divisional Council
Special Subjects 337
9 Industry Standards Committees
19 Industry Standards Committees
19 Industry Standards Committees
5 Industry Standards Committees
185 Technical Committees, Subcommittees, and Panels
217 Technical Committees, Subcommittees, and Panels
975 Technical Committees, Subcommittees, and Panels
7 Technical Committees, Subcommittees, and Panels

correspond to the projects that are supervised by the ASA Board of Examination. Committees working on problems that have a broad application in many fields are called sectional committees. Packaging, for example, has become an active standardization problem, largely because of the effective work during the war to protect equipment subjected to severe atmospheric conditions as well as rigorous handling. The data obtained from the use of these wartime standards are now being adapted for peacetime use.

The BSI, like the ASA, is mainly industrial but has the cooperation of the Government. Unlike the ASA, the Government has from the early days been a secondary source of financial support, the main financial support coming from industry. All groups concerned take part in its activities. No British Standard is approved without first having been widely circulated to the groups concerned for their comments and suggestions.

Fiscal policy and general operating policy is the responsibility of the General Council, made up of members elected from the Divisional Councils, and nominees of certain selected trade associations and government departments. The Divisional Councils are elected by the Industry Committees and have full responsibility for the technical work under their supervision.

Three assistant directors and 30 technical assistants work under the director in keeping the activities of these committees moving. A staff of 130, including librarians, draftsmen, stenographers, record clerks, and general office workers carry on the services necessary to keep the technical work going. Ninety-three new and 29 revised British Standards were issued last year, and more than 450,000 copies of BSI publications were distributed.

Its influence is not only national but international as well. It is a member of the International Organization for Standardization, representing the United Kingdom. In addition, many of the British Standards are adopted either verbatim or in essence in the countries that make up the British Commonwealth.

Its performance during and since the war, and its ideals for standards which will not only bring financial returns to the groups using them but will also bring about the most economic use of materials and productive facilities, are winning for the BSI the increasing recognition and respect of all groups in the United Kingdom, both governmental and industrial.

(A description of the certification program being carried out by the British Standards Institution will be published in the February issue.)

British Standard Specifies Sizes for X-Ray Film

The sizes of x-ray film and intensifying screens, together with internal sizes of cassettes, have been specified in a new standard approved by the British Standards Institution (BS 1443). Manufacturers of x-ray equipment and accessories who have to meet the needs not only of medical and industrial users in Britain but also must face the necessity of producing equipment adapted for metric sizes for the export trade, requested preparation of the standard.

The committee assigned this work found it possible to provide satisfactorily for all uses with a range of 10 inch sizes and 6 metric sizes; these 16 sizes will replace more than 30 formerly in use in Great Britain. Films and screens of standard sizes will be usable in existing equipment.

British Plan "Frontal Attack" On Nonstandard Sizes, Styles

The British Government in cooperation with industry is to make a frontal attack upon the "huge variety of uneconomic and unnecessary" sizes and styles of components and finished products in the manufacturing field, C. R. Strauss, Minister of Supply, announced November 22. In cooperation with the British Standards Institution and various manufacturers associations, he said, the country hopes to effect substantial savings and increase production.

The Minister said that the recent agreement of the United States, Canada, and Britain on standardization of screw threads was a separate action and not part of the program. He added that consultations are planned between the new standardization committee which he has set up and the Anglo-American committee for increasing British production.

Mr Strauss said that efforts would be undertaken at once for the standardization of textile machinery and of the beds upon which such machinery is placed. Electric motors, coal carbonization plants, agricultural machinery, generators, and certain types of cans were among products listed for early attention by the standards committee.

As Reported by the N. Y. Times.

Standards Received from Other Countries

MEMBERS of the American Standards Association may borrow copies of any of the following standards recently received from other countries by contacting the ASA Library. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under the general UDC classification.

003 Writing

France

Algebraic Symbols, NF X02-101

Geometric and Vectorial Symbols, NF X02-102

The Netherlands

Symbols for Legal Time Units, Indication of a Point of Time and of a Space of Time, N360

621.3 Electrical Engineering

Austria

Open Type Three-phase Motors, E4600

Nameplates for Electric Machines, E4911

Belgium

Electric Waffle Irons, Special Requirements, NBN 165

Electric Water Heater, Immersion Type, Special Requirements NBN 169

Electric Heating Pads, Special Requirements, NBN 172

Electric Soldering Irons, Special Requirements, NBN 174

General Prescriptions Relative to Household Electric Heating Apparatus, NBN 58

France

Rules for Manufacturing Copper and Copper Alloy Conductors for Overhead Lines, NF C111

Rules for Manufacturing Copper and Copper-Alloy Contact Wires, NF C114

Germany

Instructions for Measuring Surface Leakage Current, DIN 57110

Rules for Construction Power Installations for Service, Voltage Below 1000 v, DIN 57100

Voltage, for Service voltage of 1000 v and over, DIN 57101

Rules for Construction of Power Stations, DIN 57105

Electric Installations in Agriculture, DIN 57130

Protective Measures for Power Installations with Working Voltage Under 1000 v, DIN 57140

Outside Transformers, with Copper Winding, Rating 16000-40000 kva, DIN 42508

Outside Transformers, with Aluminum Winding, Rating 10000-40000 kva, DIN 42508, sh.2

Self-cooling Transformers, with Copper Winding, Rating 10-800 kva, DIN 42524

Self-cooling Transformers with Aluminum Winding Rating 8-630 kva, DIN 42524, sh.2

Limit Overloads Which Could Be Applied to Transformers with Copper and Aluminum Winding DIN 42549

Various Rules for Transformers, DIN 57532

Use of Copper in Electrical Engineering, DIN 57201

Use of Aluminum in Electrical Engineering, DIN 57202

Use of Steel-Copper in Electrical Engineering, DIN 57203

Use of Zinc in Electrical Engineering, DIN 57204

Use of Soft Steel Conductors in Electrical Engineering, DIN 57205

Rubber-insulated and Sheathed Wires and Cables, DIN 57208

Plastic Insulating Material, DIN 57320

Connecting Bolts, DIN 46202

Information Sheet on Lighting Protection of Installations with Working Voltage under 1000 v, DIN 57192

Junction and Branch Boxes, DIN 57606

Terminals, DIN 57608

Plugs up to 100a, 750v, DIN 57620

Switches up to 60a, 750v, DIN 57632

Safety Code for Protection of Electrical Installations from Lightning and Explosion, DIN 57170 and D 57170U

Fuses with Enclosed Melting Element up to 200a, 500v, DIN 57635

Circuit Safety Switches up to 25a, 380v, DIN 57641

Cell Tester for Lead Accumulators, DIN 43810

Rules for Electric Meters, DIN 57410

Lamp Caps and Sockets up to 750v, DIN 57616

Galvanic Cells and Batteries, DIN 57807

Electric Accumulators, DIN 57510

Electro-heating Appliances, DIN 57720 and 57720U

Telecommunication Appliances, DIN 57800

Telecommunication Wiring, DIN 57815

Kraft Paper Tubes for Fixed Capacitors, DIN 41110, sh.2

Plastic Tubes for Fixed Capacitors, DIN 41110, sh.3

Glass Tubes for Fixed Capacitors, DIN 41110,sh.4

The Netherlands

Flanges for Attachment of Electric Machines, N1151

United Kingdom

Moulded Insulating Materials for General Electrical Purposes, BS 488

Consumers' Electricity Control Units, BS 1454

621.5 Pneumatic Machines. Refrigeration

France

Cylinders for Compressed Liquefied or Dissolved Gases, Definition, Terminology, NF A81-200

Acetylene Generators, Maximum Allowable Pressure for Normal Service, NF A84-133

Safety Valves, Specifications, NF A84-300

Safety Valves, Intake Connection, NF A84-301

621.7 Workshop Practice

France

Pasteboard Shoe Boxes, NF H15-002

621.8 Machine Parts, Means of Attachments, Etc

Belgium

Machine Elements, Standard Tapers, NBN 145-1947

Rules for Construction of Hoisting Machinery, NBN 159.13

Germany

Set Screws, Cup Point, DIN 913

Set Screws, Cone Point, DIN 914

Set Screws, Dog Point, DIN 915

Stud Bolts, DIN 940 sh.1

Stud Bolts, DIN 943 sh.1

Round Head Rivets, DIN 123 sh.1

Lubricants, Characteristics, DIN 6579

Testing of Lubricants, Viscosity, DIN 53655 sh.1

Testing of Lubricants, Emulsification, DIN 53663

The Netherlands

Machined Transmission Shafts (supersedes N5, N6 and N109), N1338

Black Bolts, Hexagonal Head, Metric Thread With or Without Hexagonal Nut (3rd ed.), N102

Rivets, Types B, BB, C, D and H-I . . . H-V, N671

Finished Stove Bolts and Nuts, With Whitworth Thread, N1304

Steel Wire Ropes, General Specifications and Tests, N296

Steel Wire Ropes, Minimum number of required bendings and torsions, N297

625 Techniques of Traffic Routes on Land

France

Wheels, semi-finished, NF F01-019

Wheels, Tolerances, NF F01-023

Wheels, finished, Tolerances, NF F01-024

Assembled axles, Tolerances, NF F01-025

Marking of axles, wheels, tires, Definitions, NF F01-026

Marking of straight axles, NF F01-027

Marking of wheels and tires, NF F01-028

Locomotive driving and coupled wheels, Tolerances, NF F20-004

Marking of monoblock crane shafts, NF F20-005

Marking of multiblock crankshafts, NF F20-006

Germany

Rails up to 20 kg-m, DIN 5901 sh.1

Flat and Angle Fishplates, DIN 5901 sh.2

Rails Over 20 kg-m, DIN 5902 sh.1

629.12 Ships and Shipbuilding

France

Installation of Cables on Shipboard, Supporting Plates, NF J78-200

Installation of Cables on Shipboard. Perforated Strips, NF J78-210

Installation of Cables on Shipboard. Perforated Channels, NF J78-211

Installation of Cables on Shipboard. Perforated Z-Shapes, NF J78-212

Installation of Cables on Shipboard. Specially Shaped Bands, NF J78-213

Light Metal Vertical Ladders, Model I and II, NF J32-405

Light Metal Vertical Ladders, Model III and IV, NF J32-406

Reinforced Metal Vertical Ladders, Models V and VI, NF J32-407

Stamped Sheet Iron Vertical Ladders, NF J32-409

Method of Attaching Vertical Metal Ladders to the Partitions, NF J32-412

Method of Attaching Vertically Hanging Metal Ladders, NF J32-413

Metal Stairs, General, NF J32-420

Metal Stairs. Profile of Steps and Strings, NF J32-425

Metal Stairs. Protective Plate, NF J32-429

Metal Stairs. Front Molding, NF J32-430

Pumps. Terminology, NF J51-000

Cable Clamps, NF J78-220

631 Agricultural Tools and Machinery

Belgium

Agricultural Machinery. Harrows for Animal Traction, NBN 182

Agricultural Machinery. Sowing Machines, NBN 184

France

Caterpillar Tractors. Position and Direction of Command Handles, NF U10-101

Caterpillar Tractors. Towing Hook. Location and Dimensions, NF U14-101

Flat Discs for Ploughs, NF U21-051

Teeth for "Canadian Type" Harrow, NF U22-005

Teeth for Canadian Type Cultivator, NF U22-006

Detail of Teeth for Canadian Harrows and Cultivators. Triangular Ploughshare, NF U22-007

Detail of Teeth for Canadian Harrows and Cultivators. Reversible Share, NF U22-008

Convex Discs for Fallow Breaking Ploughs, NF U22-021

Convex Discs for Pulverizing Ploughs, NF U22-022

Convex and Flat Discs for Hoes, NF U22-023

Flat Discs for Sowing Machines, NF U24-051

Convex Discs for Potato Planting Machines, NF U24-151

662.6 Fuel Industry

France

Classification of Coals and Anthracities, NF M10-001

Limit Agglutination Index of Solid Combustibles, NF M11-003

Testing of Fuel Behaviour at Progressive Heating, NF M11-004

Alteration and Aging of Solid Combustibles, NF M11-005

Sampling of Gas, NF T79-001

Determination of Moisture Content in Gas, NF T79-002

Determination of Sulfur and Tar Content in Gas, NF T79-003

Percentage of Ferrocyanide in Gas, NF T79-004

Percentage of Nitrogen, NF T79-006

665 Oils, Fats, Waxes

France

Percentage of water and foreign matters, in fats, NF T60-201

Percentage of impurities, NF T60-202

Determination of iodine number, NF T60-203

Determination of acidity, NF T60-204

Percentage of non-saponifiable matters, NF T60-205

Determination of the saponification index, NF T60-206

Preparation of fatty acid not soluble in water, NF T60-207

Determination of solidification point, NF T60-208

Percentage of ashes, NF T60-209

Percentage of oxydized acids, NF T60-210

Determination of poly-bromine number, NF T60-211

Determination of refractive index, NF T60-212

Percentage of fatty acid in soap, NF T60-301

The Netherlands

Raw and Boiled Linseed Oil for Paints, Varnishes and Lacquers, N600

669 Metallurgy

France

Chemical Analysis of Ferro and Silico-Alloys. Percentage of Sulfur, NF A06-204

Chemical Analysis of Ferro and Silico-Alloys. Percentage of Molybdenum, NF A06-209

Chemical Analysis of Ferro and Silico-Alloys. Analysis of Ferro-Silicon, NF A06-223

Chemical Analysis of Ferro and Silico-Alloys. Percentage of Iron, NF A06-230

Hot-Rolled Ordinary Steel Products (Excerpts from Standard A33-101), EN A33-104

Double-Head Rail and Fish Plate for Aerial Transporter, NF A45-360

Foundry Products. Malleable Cast Iron Pieces, NF A32-811

Hot-Rolled Shapes. I-Beams, NF A45-204

Hot-Rolled Shapes. Strip Iron, NF A46-100

Germany

Copper and Copper Alloys, DIN 1726

69 Building Industry and Trade. Building Construction

Belgium

Specifications for Reinforced Concrete Poles, NBN 96 Plain Bricks for Ordinary Masonry, NBN 118

Coordination of Structural Dimensions. Modular System. Fundamental Rules, NBN 180

Coordination of Structural Dimensions. Modular System. General Rules Applicable to Masonry, NBN 181

Czechoslovakia

Supervision of Building Work, CSN 1431 Wooden Door Frames, CSN 2042

France

Roos. General. Terminology, NF P30-101 Roofs. General. Minimum Specification, NF P30-201

Passengers and Freight Elevators. Electric or Electrically Operated, NF P82-201

Elevators (Group I), 225 kgf-0.70 m/s, Overhead Motors. Dimensions, NF P82-401 Elevators (Group I), 350 kgf-0.70 and 1.00 m/s. Overhead Motor. Dimension, NF P82-402

Elevators (Group I), 500 kgf-1.00 and 1.20 m/s, Overhead Motor. Dimensions, NF P82-403

Elevators (Group I), 700 kgf-1.00, 1.20 and 1.50 m/s. Overhead Motor. Dimensions, NF P82-404

Elevators (Group I), 225 kgf-0.70 m/s. Motor in Basement. Dimensions, NF P82-411

Elevators (Group I), 350 kgf-0.70 and 1.00 m/s. Motor in Basement. Dimensions, NF P82-412

Elevators (Group I), 500 kgf-1.00 and 1.20 m/s. Motor in Basement. Dimensions, NF P82-413

Elevators 700 kgf-1.00, 1.20 and 1.50 m/s. Motor in Basement. Dimensions, NF P82-414

Hospital Elevators (Group I). 300 and 500 kgf-0.35 and 0.50 m/s. Overhead Motor. Dimensions, NF P82-421

Hospital Elevators. 300 and 500 kgf-0.35 and 0.50 m/s. Motor in Basement. Dimensions, NF P82-431

Hospital Elevators. 300 and 500 kgf-0.35 and 0.50 m/s. Motor in Basement, on the Side of Shaft. Dimensions, NF P82-432

Furniture Elevators (Group I and II). 500 kgf-0.50 m/s. Overhead Motor. Dimensions, NF P82-441

Automobile Elevators (Group I and II). 2500 kgf-0.30 m/s. Overhead Motor. Dimensions, NF P82-442

Small Elevators (Group III). 50 kgf-0.50 and 0.70 m/s. Overhead Motor. Dimensions, NF P82-451

Small Elevators. 100 kgf-0.50 and 0.70 m/s. Overhead Motor. Dimensions, NF P82-452

691 Building Materials

Argentina

Asbestos-Cement Pipes for Liquids Under Pressure, 1515-P

Coarse Aggregates, 1533-P

Fine Aggregates for Portland Cement Concrete, 1512-P

Hardness Test of Rock by Rubbing, 1539-P

Sampling of Fresh Concrete, 1541-P

Test for Abrasion of Rocks by Use of Deval Machine, 1527-P

Uruguay

Compression Test of Concrete Specimens, UNIT 40-48

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Test for Determination of Modulus of Elasticity in Concrete Specimen, UNIT 42-48

693.5 Concrete Constructions

Czechoslovakia

Design of Concrete Structure, CSN 1090

697.3 Central Heating

Czechoslovakia

Boilers and Chimneys for Central Heating Systems, CSN 1453

Central Heating Radiators, CSN 1451

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Austria

Building Specifications for Glazing Work, B 2229

Building Specifications for Inside Painting, B 2227

Building Specifications for Outside Painting, B 2230

ASA STANDARDS ACTIVITIES

Status of Standards As Of December 2, 1948

American Standards Approved Since November 5, 1948

Administrative Requirements for Building Codes, A55.1-1948 (Revision of A55.1-1944)

Sponsors: American Municipal Association; Building Officials Conference of America

Specifications for Indiana Limestone, A93.1-1948

Sponsor: Indiana Limestone Institute

Cast-Iron Pipe Flanges and Flanged Fittings (Class 125), B16.1-1948 (Revision of B16a-1939)

Sponsors: Heating, Piping, and Air Conditioning National Association; Manufacturers Society of the Valve and Fittings Industry; American Society of Mechanical Engineers

Specifications for Sheets and Pillowcases, L4.1-1948

Sponsor: American Hospital Association

Allowable Concentration of Xylene, Z37.10-1948 (American War Standard) Z37.10-1943

Endorsing Sponsor: American Conference of Governmental Industrial Hygienists

Dimensions for Radiographic Intensifying Screens, Z38.1.50-1948

Method for Determining the Melting Point of the Photographic Layer of Films, Plates, and Papers, Z38.8.20-1948

Dimensions for 70-Millimeter Perforated (and Unperforated) Film (Revision of Z38.1.2-1941)

Sponsor: Optical Society of America

Standards Being Considered for Approval

By the Standards Council—

Specifications for Salt-Water Soap (ASTM D 593-42; K60.13)

Specifications for Liquid Toilet Soap (ASTM D 799-45; K60.14)

Specifications for Olive Oil Chip Soap (Type A, Pure; Type B, Blended) (ASTM D 630-42; K60.15)

Specifications for Palm Oil Chip Soap (Type A, Straight; Type B, Blended) (ASTM D 536-42; ASA K60.16)

Specifications for Modified Soda (Sesquicarbonate Type) (ASTM D 457-39; ASA K60.17)

Specifications for Sodium Metasilicate (ASTM D 537-41; ASA K60.18)

Specifications for Sodium Sesquisilicate (ASTM D 594-41; ASA K60.19)

Specifications for Tetrasodium Pyrophosphate (Anhydrous) (ASTM D 595-45; ASA K60.20)

Methods of Sampling and Chemical Analysis of Special Detergents (ASTM D 501-46; ASA K60.21)

Sponsor: American Society for Testing Materials

By the Board of Review—

Distribution, Power, and Regulating Transformers, and Reactors Other Than Current-Limiting Reactors, C57.12 (Revision of C57.12-1948)

Sponsor: Electrical Standards Committee

Chip Soap (ASTM D 496-39; ASA K60.1)

Ordinary Bar Soap (ASTM D 497-39; ASA K60.2)

Powdered Soap (ASTM D 498-39; ASA K60.3)

Compound Powdered Soap (Granulated, with Rosin) (ASTM D 691-44; ASA K60.9)

Caustic Soda (ASTM D 456-39; ASA K60.10)

Soda Ash (ASTM D 458-39; ASA K60.11)

Trisodium Phosphate (ASTM D 538-44; ASA K60.12)

Sponsor: American Society for Testing Materials

Building Code Requirements for Grandstands, Tents, and Other Places of Outdoor Assembly, Z20.2 (Revision of Z20.2-1946)

Sponsors: National Fire Protection Association; Building Officials Conference of America, Inc

Accelerated Ageing of Textile Dyes with Sulfur, L14.1

Colorfastness of Textiles to Acids and Alkalies, L14.2

Colorfastness of Wool Textiles to Carbonizing, L14.3

Colorfastness of Silk to Degumming, L14.4

Colorfastness of Textiles to Fulling, L14.5

Colorfastness of Wool Textiles to Mill Washing and Scouring, L14.6

Colorfastness of Silk to Peroxide Bleaching, L14.7

Colorfastness of Textiles to Sea Water, L14.8

Colorfastness of Textiles to Stoving, L14.9

Test for Mercerization, L14.10

Evaluation of Wetting Agents, L14.11

Definition of Terms Relating to Textile Materials (ASTM D 123-47; ASA L14-.12)

General Methods of Testing and Tolerances for Cotton Yarn (Tentative) (ASTM D 180-47T; ASA L14.13)

Methods of Testing and Tolerances for Cotton Sewing Threads (ASTM D 204-42; ASA L14.14)

Methods of Test for Osnaburg, Cement Sacks (ASTM D 205-39; ASA L14.15)

Methods of Testing and Tolerances for Woven Tapes (ASTM D 259-44; ASA L14.16)

Methods of Testing and Tolerances for Certain Light and Medium Weight Cotton Fabrics (ASTM D 274-36; ASA L14.17)

Methods of Test for Asbestos Yarns (ASTM D 299-42; ASA L14.18)

Method of Determining Relative Humidity (ASTM D 337-34; ASA L14.19)

Methods of Test for Holland Cloth (ASTM D 376-35; ASA L14.20)

Methods of Testing and Tolerances for Woolen Yarns (ASTM D 403-44; ASA L14.21)

Methods of Testing and Tolerances for Worsted Yarns (ASTM D 404-44; ASA L14.22)

General Methods of Testing Cotton Fibers (Tentative) (ASTM D 414-47T; ASA L14.23)

Method of Test for Strength of Rayon Woven Fabric When Wet (ASTM D 415-38; ASA L14.24)

Method of Testing Pile Floor Covering (ASTM D 418-42; ASA L14.25)

Methods of Test for Fineness of Wool (Tentative) (ASTM D 419-47T; ASA L14.26)

Methods of Testing and Tolerances for Certain Carded Cotton Gray Goods (ASTM D 433-39; ASA L14.27)

Methods of Testing and Tolerances for Certain Wool and Part Wool Fabrics (ASTM D 462-44; ASA L14.28)

Methods of Test for Fineness of Wool Tops (Tentative) (ASTM D 472-47T; ASA L14.29)

Methods of Testing and Tolerances for Spun Rayon Yarns and Threads (ASTM D 507-44; ASA L14.30)

Methods of Testing and Tolerances for Yarns Spun from Mixed Fibers (ASTM D 508-43; ASA L14.31)

Method of Test for Fiber Length of Wool (ASTM D 519-40; ASA L14.32)

Methods of Testing Rayon Staple (ASTM D 540-44; ASA L14.33)

Methods of Testing and Tolerances for Single Jute Yarn (ASTM D 541-41; ASA L14.34)

Methods of Testing Woven Asbestos Cloth (ASTM D 577-42; ASA L14.35)

Methods of Testing and Tolerances for Glass Yarn (Tentative) (ASTM D 578-47T; ASA L14.36)

Methods of Testing and Tolerances for Woven Glass Fabrics (ASTM D 579-47; ASA L14.37)

Methods of Testing and Tolerances for Woven Glass Tapes (ASTM D 580-47; ASA L14.38)

Methods of Testing and Tolerances for Woven Glass Tubular Sleeving and Braids (ASTM D 581-44; ASA L14.39)

Method of Test for Hard Scoured Wool in Wool in the Grease (Laboratory Scale Operations) (ASTM D 584-47; ASA L14.40)

Methods of Testing Asbestos Tubular Sleeving (ASTM D 628-44; ASA L14.41)

Methods of Testing and Tolerances for Certain Fine Staple Cotton Gray Goods (ASTM D 679-44; ASA L14.42)

Methods for Testing and Tolerances for Certain All-Cotton and Cotton-and-Rayon Fine Fancy Goods (ASTM D 680-44; ASA L14.43)

Methods of Testing and Tolerances for Jute Rove and Plied Yarn for Electrical and Packing Purposes (Tentative) (ASTM D 681-42T; ASA L14.44)

Methods of Testing and Tolerances for Rope (Leaf and Bast Fibers) (ASTM D 738-46; ASA L14.45)

Methods of Testing and Tolerances for Spun, Twisted, or Braided Products Made from Flax, Hemp, Ramie, or Mixtures Thereof (ASTM D 739-46; ASA L14.46)

Method of Test for Compatibility of Glass Yarn with Insulating Varnish (Tentative) (ASTM D 886-46 T; ASA L14.47)

Recommended Practice for a Universal System of Yarn Numbering (ASTM D 861-47; ASA L14.48)

Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

Allowable Concentration of Methyl Chloride, Z37.18

Endorsing Sponsor: U. S. Department of Interior, Bureau of Mines

By the Mechanical Standards Committee—

Straight Cut-Off Blades, B5.21

Sponsors: Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; American Society of Mechanical Engineers

Markings for Grinding Wheels and Other Bonded Abrasives, B5.17 (Revision of B5.17-1944)

Sponsors: Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; American Society of Mechanical Engineers

Standard Specifications for Carbon and Alloy-Steel Nuts for Bolts for High-Pressure and High-Temperature Service (Revision of ASTM A194-1946; ASA G38.1-1948)

Sponsor: American Society for Testing Materials

Specifications for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves, and Parts for High Temperature Service, G37.1 (Revision of G37.1-1947)

Sponsor: American Society for Testing Materials

By the Electrical Standards Committee—

Incandescent Lamps for General Service for 115-, 120-, and 125-Volt Circuits, C78.100

Incandescent Lamps for General Service for 230- and 250-Volt Circuits, C78.101

Incandescent Lamps for Train, Locomotive, and Country Home Service, 30-34 and 60-64 Volts, C78.102

Incandescent Lamps for Street Railway Service, C78.103

Incandescent Lamps for Spotlight and Floodlight Service, 115, 120, and 125 Volts, C78.105

Infrared Lamps for 115-125 Volt Service, C78.106

Incandescent Projector and Reflector Spotlight and Floodlight Lamps, 115, 120, and 125 Volts, C78.107

Incandescent Lamps for Street Series Service, C78.109

S-6 Bulb, Candelabra Screw Base, C78.200

C-7 Bulb, Candelabra Screw Base, C78.200

S-11 Bulb, Medium Screw Base, C78.201

S-11 Bulb, Intermediate Screw Base, C78.202

S-14 Bulb, Medium Screw Base, C78.203

A-15 Bulb, Medium Screw Base, C78.204

A-17 Bulb, Medium Screw Base, C78.205

A-15 Bulb, Medium Screw Base, C78.206

T-6½ Bulb, Intermediate Screw Base, C78.207

T-10 Bulb, Medium Screw Base, C78.209

T-10 Reflector Bulb, Medium Screw Base, C78.209

A-19 Bulb, Medium Screw Base, C78.210

A-19 Bulb, Medium Screw Base, C78.211

T-8 Bulb, Medium Screw Base, C78.212

PS-25 Bulb, Three-Contact Medium Screw Base, C78.213

PS-25 Bulb, Three-Contact Mogul Screw Base, C78.214

A-21 Bulb, Medium Screw Base, C78.215

A-21 Bulb, Medium Screw Base, C78.216

A-21 Bulb, Medium Screw Base, C78.217

A-23 Bulb, Medium Screw Base, C78.218

G-30 Bulb, Three-Contract Mogul Screw Base, C78.219

PS-25 Bulb, Medium Screw Base, C78.220

PS-30 Bulb, Medium Screw Base, C78.221

PS-35 Bulb, Mogul Screw Base, C78.223

PS-40 Bulb, Mogul Screw Base, C78.224

PS-52 Bulb, Mogul Screw Base, C78.225

P-25 Bulb, Medium Screw Base, C78.226

G-30 Bulb, Medium Screw Base, C78.233

G-40 Bulb, Mogul Screw Base, C78.234

G-40 Bulb, Mogul Screw Base, C78.235

R-40 Bulb, Medium Skirted Screw Base, C78.236

R-40 Bulb, Medium Screw Base, C78.237

PAR-38 Bulb, Medium Skirted Screw Base, C78.238

PS-25 Bulb, Mogul Screw Base, C78.245

T-64 Bulb, Mogul Bipost Base, C78.248

G-30 Bulb, Medium Skirted Screw Base, C78.249

Miniature Incandescent Lamps, C78.140

Sponsor: Electrical Standards Committee

Standards Submitted to ASA for Approval

Schedules of Preferred Ratings for Power Circuit Breakers, C37.6 (Revision of C37.6-1945)

Sponsor: Electrical Standards Committee

Laminated Phenolic Products, C59.16 (Revision of C59.16-1944)

Practice for Machinery and Punching of Laminated Phenolic Plate, C59.17 (Revision of C59.17-1944)

Sponsor: American Society for Testing Materials

American Standards Being Considered for Reaffirmation

Method of Computing Food Storage Volume and Shelf Area of Automatic Household Refrigerators, B38.1-1944

Sponsors: Bureau of Home Nutrition and Home Economics, U.S. Department of Agriculture; American Society of Refrigerating Engineers

American Standards Withdrawn

Pressure-Temperature Ratings for Cast-Iron Pipe Flanges and Flanged Fittings, B16a1-1943 (American War Standard)

News About Projects

Power Switchgear, C37—

Sponsor: Electrical Standards Committee

New tables, intended to revise and replace those which comprise the present American Standard Schedule of Preferred Ratings for Power Circuit Breakers, C37.6-1945, are being considered by the ESC for approval as American Standard.

Transformers, Regulators, and Reactors, C57—

Sponsor: Electrical Standards Committee

A proposed revision of the American Standard for Distribution, Power, and Regulating Transformers, and Reactors Other Than Current-Limiting Reactors, C57.12-1948, is before the Board of Review for consideration. This revision consists primarily in establishing new preferred ratings for single-phase 500 kva and below, and 3-phase 500 kva and below transformers.

Electrical Insulating Materials, C59—

Sponsor: American Society for Testing Materials

The National Electrical Manufacturers Association has submitted to ASA for approval, proposed revisions of the American Standard for Laminated Phenolic Products (C59.16-1944) and the American Standard Practice for Machining and Punching of Laminated Phenolic Plate (C59.17-1944). These proposed revisions, developed by NEMA, will be reviewed by ASA Sectional Committee C59 on Electrical Insulating Materials. The NEMA proposals change the first standard to one for laminated thermosetting products and the second to a recommended Practice for Fabricating Laminated Plastics.

Standards for Electric Lamps, C78—

Sponsor: Electrical Standards Committee

Publication of 25 proposed American Standards covering electrical and dimensional characteristics for fluorescent and bactericidal lamps on a one year trial and criticism basis was recommended by Subcommittee 2 at a meeting November 29. These standards will serve as a starting point for the work of the new committees on lamp bases and holders, C81, and lamp ballasts, C82.

Steel Raceways for Electric Wiring Systems, C80—

Sponsors: American Iron and Steel Institute; National Electrical Manufacturers Association

A proposed American Standard for Zinc-Coated Rigid Steel Conduit was reviewed at the last meeting of this committee. A revised draft incorporating changes agreed upon at the meeting will be prepared for consideration at the next meeting.

Safety in Quarry Operations, M28—

Sponsor: National Safety Council

Now that the cement and quarry section of the National Safety Council has completed and published recommendations for safety in cement and quarry operations, plans are under way to reorganize the ASA sectional committee, M28, on this subject. Its program in developing future American Standards will be based on the work that this NSC section has accomplished. Organizations invited to appoint representatives to the sectional committee include quarry operators, manufacturers of equipment, insurance, and government groups.

Safety Code for Exhaust Systems, Z9—

The present American Standard Safety in Electroplating Operations, Z9.1-1941, is being reviewed by a special subcommittee set up by the sectional committee to consider including exhaust ventilation provisions for a wide variety of open tank exhaust systems.

This subcommittee is making a canvass to obtain data on the materials which have been used for the construction of exhaust systems on various open tank manufacturing operations, in order that the standard may contain the latest and most practical information on this subject.

Letter Symbols and Abbreviations for Science and Engineering, Z10—

Sponsors: American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; American Society for Engineering Education

This sectional committee met during the time of the ASA Annual Meeting at the Waldorf-Astoria in October.

Several important motions were approved; among them, that:

the American Society of Mechanical Engineers be requested to organize a subcommittee for the revision of the American Standard Letter Symbols for Hydraulics, Z10.2-1942;

the subcommittee on letter symbols for aeronautics and aerodynamics (No. 7) be relieved of the responsibility of including symbols for meteorology and servomechanisms in their standard. It was voted that a separate subcommittee on symbols for meteorology and another on symbols for servomechanisms be set up under the sectional committee;

because of the urgent need for this standard, the ASA proceed with the publication of principal letter symbols for aeronautics and aerodynamics, Z10.7, as a proposed American Standard to be circulated for trial and criticism;

Mr Tucker, standards manager of the ASME, be appointed chairman of the subcommittee on abbreviations for scientific and engineering terms (No. 11).

Acoustical Measurements and Terminology, Z24—

Sponsor: Acoustical Society of America

Section 8, on Recording and Reproducing, of the proposed revision of American Standard Acoustical Terminology, Z24.1, which is being published on a trial and criticism basis, was reviewed at a meeting recently between representatives of the ASA Sectional Committee and executive committee members of the National Association of Broadcasters' Recording and Reproducing Standards Committee. Results of this meeting brought correlation between the American Standard and the NAB standard so that both will use the same terminology.

Graphical Symbols and Abbreviations for Use on Drawings, Z32—

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

Each of the existing symbols in the present Patent Office Rules of Practice was considered by members of Subcommittee 2 on Electrical Symbols at a meeting November 29. The principal problem was to coordinate the nomenclature used by the Patent Office with that used in American Standards.

After five hours of deliberation, the committee was able to arrive at a decision on practically every one of the symbols and, in addition, suggested certain fundamental American Standard symbols that they thought would be useful to the Patent Office. It was reported that the Commissioner of Patents had expressed a willingness to add a note in the new Rules and Regulations to the effect that where a definite symbol was not shown an American Standard symbol be used. This seems a marked step forward. A complete draft of these suggestions was forwarded to the Patent Office by December 1.

Photography, Z38—

Sponsor: Optical Society of America

Following the discharge of the War Committee on Photography and Cinematography, Z52, the American War Standard Photographic Filter Terminology and Nomenclature, Z52.61-1945, together with a number of others, was referred to the ASA Sectional Committee on Photography, Z38, for reconsideration as a peacetime standard. The sectional committee in turn referred the matter to the subcommittee on sensitivity to radiant energy (No. 2), which subcommittee is responsible for photographic filters. All aspects of the case were considered and the subcommittee came to the conclusion that the American War Standard had served its purpose during the emergency period and was not suitable as a peacetime standard. Following the usual voting procedure, withdrawal of the standard was approved.

New Representatives on Standards Council

E. N. Ditten | L. B. Bellamy | Chas Heywood | E. P. Gangewere | W. S. Lacher

New representatives have been appointed to the Standards Council, top authority on technical work of the American Standard Association, as follows:

American Society of Tool Engineers—

L. B. Bellamy, Sterling Grinding Wheel Company, and chairman of the National Standards Committee of the ASTE, has been appointed to replace William H. Smila on the Council;

E. J. Marasko, vice-chairman of the National Standards Committee, will replace Walter F. Wagner as alternate.

Association of American Railroads—

E. P. Gangewere, superintendent of Motive Power and Rolling Equipment, Reading Company, replaces J. E. Ennis as representative of the Mechanical Division of the AAR. He is already active on the ASA Mechanical Standards Committee;

W. S. Lacher, secretary of the Engineering Division of the AAR, succeeds E. M. Hastings for his unexpired term as Engineering Division representative.

National Aircraft Standards Committee—

C. E. Heywood, standards engineer of the Chance Vought Aircraft Division of the United Aircraft Corporation, will now serve as a representative on the Council, in addition to his duties as a member of the ASA Sectional Committee on Transmission Chains and Sprockets, B29. Mr Heywood was formerly a Council alternate.

Glen Aron, standards engineer of the Northrop Aircraft Company, Inc, will act as Mr Heywood's alternate. As a representative on the sectional committees for standardization and unification of screw threads, B1; pipe thread, B2; and wire and sheet metal gages, B32, Mr Aron is already very active in ASA work.

National Association of Hosiery Manufacturers—

Erb N. Ditton, Gotham Hosiery Company, Inc, has been appointed by this new Member-Body to serve on the Council. He is at present a representative on the sectional committee on standards for women's nylon hosiery, L21.

Edmund L. Lauber, No Mend Hosiery, Inc, serving as Mr Ditton's alternate is also a member of the committee on hosiery.

New American Standards Available

ASA Number	Title of Standard	Price
Z38.1.49-1948	35-Millimeter Magazine Film, Dimensions for (For Miniature Cameras)	.25
Z38.2.6-1948	General-Purpose Photographic Exposure Meters (Photoelectric Type)	.50
Z38.7.5-1948	Printing and Projection Equipment, Methods of Testing	.25
Z38.8.17-1948	Permanency of the Silver Images of Processed Films, Plates, and Papers, Method for Predicting the...	.25
	Specifications for Photographic Grade Chemicals:	
	Developing Agents:	
Z38.8.125-1948	Mono-Methyl-Para-Aminophenol Sulfate ($HOC_6H_4NHCH_3)_2H_2SO_4$)	.25
Z38.8.127-1948	2, 4-Diaminophenol Hydrochloride ($HOC_6H_3(NH_2)_2.2HCl$)	.25
Z38.8.129-1948	Para-Aminophenol Hydrochloride ($HOC_6H_4NH_2.HCl$)	.25
Z38.8.130-1948	Pyrogallic Acid ($C_6H_3(OH)_3$)	.25
Z38.8.131-1948	Catechol ($C_6H_4(OH)_2$)	.25
Z38.8.132-1948	Para-Phenylenediamine ($C_6H_4(NH_2)_2$)	.25
Z38.8.133-1948	Para-Phenylenediamine Dihydrochloride ($C_6H_4(NH_2)_2.2HCl$)	.25
Z38.8.134-1948	Chlorhydroquinone ($C_6H_3(OH)_2Cl$)	.25
	Restrainers and Antifoggants:	
Z38.8.201-1948	Potassium Iodide (KI)	.25
Z38.8.202-1948	Potassium Chloride (KCl)	.25
Z38.8.203-1948	Sodium Chloride (NaCl)	.25
Z38.8.204-1948	Benzotriazole ($C_6H_4NHN{:}N$)	.25
Z38.8.205-1948	5-Methylbenzotriazole ($CH_3C_6H_3NHN{:}N$)	.25
Z38.8.206-1948	6-Nitrobenzimidazole Nitrate ($NO_2C_6H_3NHCH{:}N.HNO_3$)	.25
	Alkalies:	
Z38.8.225-1948	Sodium Hydroxide (NaOH)	.25
Z38.8.226-1948	Potassium Hydroxide (KOH)	.25
Z38.8.227-1948	Sodium Carbonate, Monohydrate ($Na_2CO_3.H_2O$)	.25
Z38.8.228-1948	Sodium Carbonate, Anhydrous (Na_2CO_3)	.25
Z38.8.229-1948	Potassium Carbonate (K_2CO_3)	.25
Z38.8.230-1948	Sodium Tetraborate ($Na_2B_4O_7.10H_2O$)	.25
Z38.8.231-1948	Sodium Metaborate ($Na_2B_2O_4.8H_2O$)	.25
Z38.8.232-1948	Ammonium Hydroxide (NH_4OH)	.25
	Sulfites:	
Z38.8.275-1948	Sodium Sulfite (Na_2SO_3)	.25
Z38.8.277-1948	Potassium Metabisulfite ($K_2S_2O_5$)	.25

Various subcommittees under the jurisdiction of ASA Sectional Committee Z38 on Photography developed these standards. The Optical Society of America is sponsor for the project.

ASA Number	Title of Standard	Price
A37.36-1948	Softening Point of Tar Products (Cube-in-Water Method), Method of Test for (ASTM D61-38)	.25
A37.38-1948	Coal-Tar Pitch for Stone Block Filler, Specifications for (ASTM D112-30)	.25
A37.42-1948	Testing Emulsified Asphalts, Methods of (ASTM D244-42; AASHO T59-45)	.25
A37.43-1948	Bituminous Paving Plant Inspection, Recommended Practice for (ASTM D290-39)	.25
A37.46-1948	Centrifuge Moisture Equivalent of Soils, Method of Test for (ASTM D425-39; AASHO T94-42)	.25
A37.47-1948	Field Moisture Equivalent of Soils, Method of Test for (ASTM D426-39; AASHO T93-42)	.25
A37.48-1948	Asphalt Plank, Specifications for (ASTM D517-40; AASHO M46-42 and T77-38)	.25
A37.50-1948	Moisture Density Relations of Soil-Cement Mixtures, Method of Test for (ASTM D558-44; AASHO T134-45)	.25
A37.51-1948	Wetting-and-Drying Test of Compacted Soil-Cement Mixtures, Method of (ASTM D599-44; AASHO T135-45)	.25
A37.52-1948	Freezing-and-Thawing Test of Compacted Soil-Cement Mixtures, Method of (ASTM D560-44; AASHO T136-45)	.25
A37.53-1948	Cut-back Asphalt (Rapid Curing Type), Specifications for (ASTM D597-46; AASHO M81-42)	.25
A37.54-1948	Cut-back Asphalt (Medium Curing Type), Specifications for (ASTM D598-46; AASHO M82-42)	.25
A37.55-1948	Slow-Setting Emulsified Asphalt (for Fine Aggregate Mixes), Specifications for (ASTM D631-46)	.25
A37.57-1948	Volume Correction Table for Tar and Coal-Tar Pitch (ASTM D633-44)	.25

Quality and economy in highway construction can be insured through use of these road and paving materials standards sponsored by the American Society for Testing Materials and the American Association of State Highway Officials.